

## USDA Guide Calls for Reduction in Vegetable Acreage

Cuts of from 1% to  
9% Recommended for  
Summer, Fall Crops

WASHINGTON — Acreage-marring guides for 1956-crop summer and fall vegetables for fresh use, summer melons, vegetables for processing, and sweetpotatoes were issued recently by the U.S. Department of Agriculture.

Reductions of 2% in total acreage for fresh summer vegetables, 1% for fresh fall vegetables, 9% for summer melons, and 6% for sweetpotatoes were recommended. The guide for vegetables for commercial processing is a total planted acreage 2% more than in 1955.

The guides are part of an annual series. Guides for winter and spring vegetables were announced by the department in August and November 1955. (See Croplife, page 2, Aug. 22, page 2, Nov. 14.) Issued seasonally prior to planting time the guides are designed to assist vegetable growers in planning production. According to growers on the department's recommended acreage is voluntary. In the aggregate, the 1956 guides

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### F. LIBBY SAYS:

## Farm Use of Atom Can Save Millions

EAST LANSING, MICH.—Across-board use of atomic energy by American farmers could save them as much as \$210 million a year, was the assertion of Dr. Willard F. Libby, Commissioner of the U.S. Atomic Energy Commission at the recent conference on Radioactive Isotopes in Agriculture held at Michigan State University. Dr. Libby added that aside from the monetary savings, the farmer's productivity would be greatly increased and his work load would be lightened appreciably.

The Commissioner said that the potential contribution of atomic energy to agriculture could be approximately as large as the contribution of atomic energy to the generation of electric power. He termed as "conservative" his estimate of the 210-million-dollar annual savings.

## Corn Borer Found In Growing Cotton Stalks in Missouri

COLUMBIA, MO. — University of Missouri entomologists report that several corn borers were found in the stalks of growing cotton plants in Southeastern Missouri fields during the past season.

They believe that it is the first authentic record of the insect attacking cotton grown under field conditions in the U.S. A similar instance was noted in Franklin County, Tennessee after the Missouri discovery.

Later in the season the Missouri entomologists found borers in cotton bolls, causing damage similar to that done by the cotton boll worm.

The borers were first found when

(Continued on page 8)

## Dr. W. B. Albert Elected Head Of Southern Weed Conference

—See Photo on Page 20—

NEW ORLEANS — The ninth annual Southern Weed Conference, attended by more than 300 agricultural scientists from 13 southern states, concluded a three-day conference devoted to chemical warfare on weeds and their damaging effects on agriculture, public health and general national welfare here Jan. 18.

Dr. Glenn C. Klingman, North Carolina State College, who presided over this year's session of the conference, reported substantial gains have been made in the weed crusade during the past year, that technical developments as well as increased know-how in the use of chemical herbicides and new and improved chemical weed killers being developed promise greatly improved crop production throughout the South.

Research in the war on weeds is

## Pacific Northwest Groups Hear Discussions of Insect Resistance, New Products

PORTLAND, ORE.—Promising results with systemic insecticides against resistant insects were reported by Federal and State experiment station researchers during the recent Pacific Northwest Agricultural Chemical Industry conference here. Groups included in the meetings held from Jan. 15-18 were the Northwest Vegetable Insect Control Conference and the Western Cooperative Spray Project.

Discussions on how to cope with insect resistance were only one of a number of timely topics covered at the meeting which attracted nearly

300. Charles F. Doucette, of the U.S. Department of Agriculture, reported that in trials at Sumner, Washington, chrysanthemums were kept free of aphids and mites for the life of the plants with demeton applications. Mr. Doucette explained he tried without success to establish mite populations on treated chrysanthemums.

Systemic insecticides also gave promising results in reducing aphid infestations on hops and potatoes, he said.

H. H. Crowell, Oregon State College scientist, reported that demeton was tested on potatoes as a seed piece dip and reduced the infestation of virus-spreading aphids. W. C. Cook, USDA entomologist at Walla Walla, Wash., reported that early aphid populations in green pea fields in the Blue Mountain area of eastern Oregon and eastern Washington last season were the lowest in many years.

Processors joined pea growers in a community spray program to kill the aphids with malathion on 1,800 acres of alfalfa, it was reported. They killed the pests before they moved into the pea fields. Mr. Cook emphasized

(Continued on page 20)

## Davison Completes New Facilities at Perry, Iowa, Plant

PERRY, IOWA—Davison Chemical Co., Division of W. R. Grace & Co. has announced the completion of new fertilizer production facilities at its plant here. The new facilities, installed at a cost of nearly \$300,000 will increase the capacity of the plant by 50% and will permit the production of a wider range of high grade granular fertilizers.

Harold Clayton, manager of the local plant, reports that the new equipment will make possible an extension of the high analysis grades which the plant has been turning out. Included will be a 15-15-15 grade.

Aside from the installation of new manufacturing equipment, other improvements have been made. The warehouse was extended, a new loading dock installed and the main production building has been completely revamped to accommodate the new granulating machinery.

Davison was a pioneer in Iowa with granular fertilizer, having offered this type of plant food to farmers in the state for a number of years. Mr. Clayton points out that the plant supplies fertilizers in all recommended analyses in the area and with the enlarged facilities the firm expects to expand its operations.

He included in his 210-million-dollar estimate these figures:

**Plant insecticides — 40 million dollars through a savings of only 1% in food losses by insects.**  
**Fertilizer — 10 million, through improved methods of application, timing and placement of fertilizer.**

And the other estimates included 100 million in the field of genetics through the development of rust-free oats; 40 million through food preservation methods, and 20 million to halt losses from the screw-worm.

Dr. Libby said "estimates have been made by the University of Minnesota that if better insecticides and fungicides can be obtained—and very likely radioisotopes would be one of the techniques used to obtain them—the yields of many crops could be in-

creased by 25 to 30% and in some cases, more."

Another speaker at the conference of 200 scientists declared that atomic weapons are being used to break through the defense of insecticide-resistant insect pests. That report was given by Dr. H. L. Haller, of the United States Department of Agriculture.

By "tagging" insecticides with radioactive materials, scientists can trace the course of the insecticides in an insect's body, Dr. Haller told the conference. This yields clues as to how some insects alter poisonous substances, making them harmless within their bodies.

As more is learned about this biochemical defense system, entomolo-

(Continued on page 21)



## Two Speakers Named for NAC Spring Meeting

WASHINGTON—George P. Larrick, U.S. commissioner of food and drugs, and Dr. J. Wayne Reitz, University of Florida president, will be featured speakers at the spring meeting of the National Agricultural Chemicals Assn., to be held at the Hollywood Beach Hotel, Hollywood, Fla. March 14-15.

Top industry and government speakers on the program will discuss the latest information on the use of atomic energy in agriculture, the development and marketing of new pesticides, new uses for fungicides, USDA pesticide research activities and the economics of the cotton industry. The theme, "Read The Label For Safety" will be highlighted in a report on the association's expanded safety and safe use program.

## Iowa Fertilizer Dealers to Meet Jan. 31

AMES, IOWA—Two farm "squeezes" will get special attention at the annual Fertilizer Dealers' Short Course at Iowa State College Jan. 31, according to John Pesek, Iowa State College agronomist.

The cost-price squeeze and the soil moisture squeeze that are plaguing Midwest farmers will be considered in discussions by Iowa State College specialists. Other topics will deal with fertilizer needs, use and carry-over.

A panel of dealers or salesmen will relate experiences in using Iowa State College soil test information as a sales aid.

Concluding the day-long program, an evening session has been reserved for a general discussion of items of particular interest to short course visitors. A group of Iowa State College soil and crop specialists will present sidelights on such subjects as fertilizer use, fertilizer balance, water solubility of phosphorus and irrigation.

The program begins at 9 a.m., Jan. 31 with registration in the foyer of the Memorial Union.

## Richmond Guano Co. Announces Promotions

RICHMOND, VA.—The board of directors of the Richmond Guano Co. Jan. 16 made a number of changes and promotions in its officers.

W. E. Barret continues as president. L. Dudley George was boosted from secretary and treasurer to vice president.

William B. Badenoch, Jr., was advanced from assistant secretary to treasurer, and Robert A. Bell from assistant treasurer to treasurer.

Mr. George is a director of the firm, member of the advisory board of State Planters Bank of Commerce and Trusts, former president of the Plant Food Institute of North Carolina and Virginia and a trustee of Seventh Street Christian Church. He served in World War II as lieutenant colonel in the corps of engineers.

Mr. Badenoch also was made a director of Richmond Guano. He served as lieutenant in the navy in World War II. Mr. Bell saw World War II service in the Pacific area as an air force captain.

## ATOMIC ENERGY CONFERENCE

SAN ANTONIO—A conference to alert business and commercial leaders of the Southwest and Mexico of the significance of atomic energy will be held at San Antonio, Texas, May 10-11, 1956. Southwest Research Institute of San Antonio will sponsor the conference in cooperation with the Atomic Industrial Forum.

## Davison Chemical Erecting New Research Laboratory

BALTIMORE—Research activities of the Davison Chemical Co. Division of W. R. Grace & Co. will be housed in a new laboratory near Baltimore scheduled for completion in 1956, Marlin Geiger, Davison president, announced recently.

Approximately 52,000 sq. ft. in total area, the three-story building will provide for a staff of 160, including professional and supporting personnel. The 148-acre site was selected for maximum convenience about midway between Baltimore and Washington, near the Johns Hopkins University Applied Physics Laboratory.

"The growth of Davison's research program is necessary to provide support for existing products and for additional diversification," said Mr. Geiger.

Present Davison research activities

are largely centered at the division's Curtis Bay Works in Baltimore. Process engineering research will continue at Curtis Bay, while other departments that will be transferred to the new laboratory include research management, chemical research, agricultural research, catalyst research, nuclear research and new products development.

Architect for the project is Voorhees, Walker, Smith & Smith of New York. Consolidated Engineering Corp. of Baltimore is building contractor.

## George A. Fowles Named to BDSA Post

WASHINGTON—The appointment of George A. Fowles, an executive of the B. F. Goodrich Chemical Co., as director of the Chemical and Rubber Division, Business and Defense Services Administration, has been announced recently by Charles F. Honeywell, BDSA administrator.

## Course in Radiation Chemistry to Be Given

HOBOKEN, N.J.—A new course "Radiation Chemistry" will be offered here by Stevens Institute of Technology beginning Feb. 6. New uses of atomic energy in bringing about chemical reactions will be explored.

The course will be held Monday evening from 6:30 to 8:45. Instructor will be Dr. Everett R. Johnson, formerly with Brookhaven National Laboratories and now on the faculty at Stevens.

Fee for the course is \$62.50. The course is part of Stevens' program of graduate study in science and engineering.

Those planning to take the course must meet admission requirements according to N. Memory, director of admissions. Applications must be accompanied by a letter of recommendation from a dean or professor along with an official college transcript.

# Announcing... MICRO-CEL

## a new insecticide absorbent-grinding aid that cuts formulation costs

Developed by Johns-Manville research... provides lower cost 75% DDT wettable for export

Johns-Manville has developed a new line of synthetic calcium silicates with unusually high absorptive capacities, large surface area, small particle size and excellent dry-flow properties. Called Micro-Cel, this new diluent is designed specifically for the production of free-flowing high percentage concentrates with either dry, viscous or liquid poisons.

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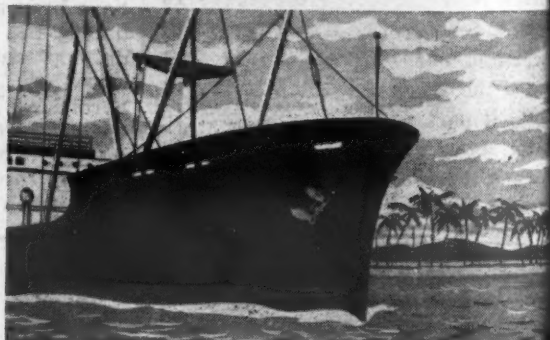
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The high absorption of Micro-Cel permits the use of greater amounts of low-cost diluents. In addition, this high absorption results in a lower

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Formulations of 75 per cent DDT wettable based on Micro-Cel, as developed by Johns-Manville Research, will meet government specifications. Suspension values after storage 1.5 to 2.0 can be achieved.

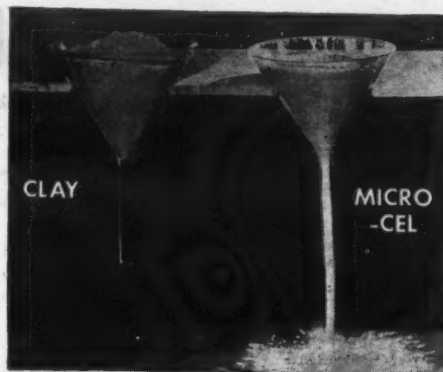


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## Spencer Net Sales, Operating Profit Show Gain in Quarter

KANSAS CITY—Net sales of Spencer Chemical Co. in the second quarter of its fiscal year ended Dec. 31 showed a gain of \$2,325,000 over the like 1954 period, largely due to polyethylene, which the company began producing earlier in the year. Sales of nitrogen products followed substantially the same pattern as a year earlier.

The improved volume was reflected in larger operating profits, and, after increased provision for income taxes, the net of \$1,041,844 was equal after preferred dividends to 79¢ a common share, compared with \$905,793, or 64¢ a share a year earlier.

Net sales for the quarter were \$9,771,514 up from \$7,446,998 a year earlier.

In a report to shareholders, Kenneth A. Spencer, president, said that

satisfactory progress is being made toward a higher sales and production volume in polyethylene. He added that the polyethylene project now is contributing a profit although capacity operations have not yet been achieved.

Sales of nitrogen products, he continued, reached their low seasonal point in the three months ended Sept. 30 and since then have been at an increasing rate. Normally the peak demand occurs in March.

The interim statement covering the first half of the fiscal year to Dec. 31 showed net sales of \$17,489,210, compared with \$14,201,147 a year earlier. Net earnings were slightly higher, amounting to \$1,605,912, equal, after preferred dividends, to \$1.16 a common share, compared with net earnings of \$1,566,948, or \$1.16 a share a year earlier. Preferred dividends of \$305,445, or \$40,810 more than a year ago accounted for comparable per share common earnings.

Income taxes for the second quarter were \$1,156,000 against \$948,000 a

year ago; the 6-month provision was \$1,727,000 against \$1,599,000.

Reflecting additions to plant and equipment, depreciation charges rose from \$805,676 in the 1954 quarter ended Dec. 31 to \$1,040,226 in the latest period.

"With the seasonal period of high demand for nitrogen ahead and the anticipated profit from polyethylene, it appears that results for the fiscal year ending June 30 should compare favorably with the last fiscal year," Mr. Spencer said.

## Arkansas Anhydrous Dealers Set Meeting

LITTLE ROCK—The annual meeting of the Arkansas Anhydrous Ammonia Dealers Assn. will be held Feb. 13 at the Lafayette Hotel here.

Officers of the group include Woodrow Castleberry, Newport, president; W. O. Hazelbaker, Jr., Stuttgart, vice president, and G. E. Davis, Lepanto, secretary-treasurer.



Dr. Reed A. Gray

## Dr. Reed A. Gray Winner of Glycerine Research Award

NEW YORK—Dr. Reed A. Gray, Merck & Co., Inc., plant physiologist, has won first award of \$1,000 and an honor plaque in the 1955 Glycerine Research Awards, it was announced recently by the Glycerine Producers' Assn. The association makes these awards annually in recognition of new and independent research contributing to knowledge and use of glycerine.

Dr. Gray's award-winning research showed that incorporating glycerine in streptomycin formulations increased the absorption of the antibiotic by plants and enhanced its effectiveness against the common bacterial blight of beans, the association said. This disease now takes an annual toll of crops estimated at \$6 million.

Formal presentation of the Glycerine Research Awards was made at a luncheon Jan. 26, at the Waldorf-Astoria Hotel, New York, during the annual meeting of the Glycerine Producers' Assn.

Control of bean blight and other bacterial diseases in plants by streptomycin, Dr. Gray's work shows, may now be economically feasible since less antibiotic is required and the improved absorption eliminates the possibility of the antibiotic being washed off the leaves by rain shortly after application, the association said.

Also of significance, according to the scientist, is the likelihood that glycerine may have a similar action in other agricultural sprays where absorption is important. These include formulations of other antibiotics for treatment of specific plant diseases, as well as solutions of fertilizers, minor elements, systemic insecticides, fungicides and plant growth regulators.

Dr. Gray has been a plant physiologist in the Microbiological Research Department of Merck's Fundamental Research Division in Rahway, N.J., since 1953. His research has centered on absorption and translocation of antibiotics and their use against plant viruses and other plant diseases.

Prior to that, he spent five years doing research on the biochemical nature of plant diseases at the Pineapple Research Institute of Hawaii.

## Fertilizer Boosts Crops During Dry Weather

VERNON, TEXAS—The old bugaboo that fertilized crops would burn more during dry weather has been dispelled by experiments on the Chillicothe Experiment Station. On field trials at the station, the crops supplied with commercial fertilizer not only made higher yields but stood up better during the driest weeks of summer.

The station also found out that crops paid big dividends when nitrogen was added to the loose, sandy fields of this area. Yields were even higher when phosphorous and nitrogen both were used.



## Micro-Cel for fertilizers

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## TYPICAL PROPERTIES OF MICRO-CEL GRADES

Grade	Color	Absorption % by Weight		Density Loose Weight lbs./cu. ft.	Surface Area Sq. Meters / gram
		Oil	Water		
800	off-white	400	425	8	150
801	off-white	225	200	15	150
802	white	400	425	9	175
803	off-white	300	350	12	100
805	off-white	425	475	6	95

Average ultimate particle size is in range of 0.02-0.07 microns  
pH—8.0-10.0

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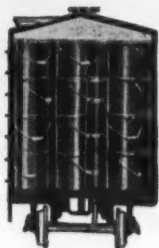
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## Kentucky Meeting Reviews Sprays and Dusts for Use During 1956 Crop Season

LEXINGTON, KY. — Sprays and dusts that will be recommended this season for the control of insects and other external pests of plants and animals were reviewed Jan. 18 at a one-day meeting at the University of Kentucky Agricultural Experiment Station here. In attendance were fruit and vegetable growers, manufacturers, mixers and dealers in spray materials, and university entomologists, botanists, agronomists and pathologists.

Armyworms, many times a serious pest in Kentucky, were almost entirely absent last year, according to entomologist J. C. Rodriguez. It is always in the Deep South states, however, he said, and moths may fly it into Kentucky this year. He recommended two pounds of toxaphene an acre for worms in small grains, and a pound an acre of Malathion on infested grass.

For some forms of cutworms in tobacco, Kentucky's most important cash crop, entomologist G. Mallory Boush recommended endrin as a consistent means of control and named dieldrin for the control of grasshoppers in tobacco.

Another entomologist, Richard Thurston, said flies in houses and barns could be controlled with diazinon, malathion, chlorthion and American Cyanamid compound 4124. All four give rapid knockdown and initial kill, he claimed.

Mr. Thurston noted that small fields in Kentucky made it difficult to spray with airplanes. Where they are used for controlling grasshoppers, he recommended thorough spraying

of borders and if possible a swath around the field.

Mr. Thurston and Kenneth J. Starks, also an entomologist, went into detail on legume and pasture insect control, giving specific dosages and toxicants per acre for aphids, spittlebugs, clover leaf weevils, leafhoppers, grasshoppers, armyworms, cutworms, bluegrass plant bugs and the like.

W. D. Armstrong, fruit specialist at the Western Kentucky Experiment Substation at Princeton, told how sprays had increased yields and improved the quality of strawberries in Western Kentucky.

For weed control in strawberries, botanist J. W. Herron and agronomist J. F. Freeman said this year's recommendation would be the use of Crag herbicide at the rate of 3 lb. an acre. The first treatment should be applied about two weeks after the plants were set, he said.

Johnson grass, a pest on many Kentucky farms, can be controlled in small areas by spraying with dry sodium chlorate at a rate of one to one and a half pounds per 100 sq. ft., or with a spray of sodium TCA, four ounces in water. For large areas of solid Johnson grass, plowing and clean cultivation, the speakers said.

Speakers warned about the careless use of spray materials. Dr. Robert Singer, animal pathologist, told of several cases where children or livestock had been poisoned. They said to read and follow manufacturers instructions as given on labels, never purchase unmarked and unlabelled materials, store away from children and livestock, and change clothes and take a bath after using any sprays or dusts.

W. A. Price, head of the university's department of entomology and botany, presided. He explained that modern use of insecticides began with the perfection of DDT in 1942. This material changed the entire set-up in the control of crop and livestock pests.

### Tennessee Boll Weevil Hibernation Count Averages 902 an Acre

NASHVILLE, TENN.—A hibernation count on boll weevil in Tennessee discloses an average of 902 per acre, according to a report by the Tennessee Department of Agriculture.

"The figure is by no means alarming," Howard L. Bruer, state insect and plant disease control director, said. "While it is almost three times more than the 1954 average of 311, it is substantially lower than the high mark of 2,259 in 1952."

"The calculated, or estimated, hibernation does not presage heavy damages to Tennessee cotton plants," he continued. "Records compiled by the state division, since instituted in 1948, show there is a high mortality among the hibernating pests—generally 60%."

"Too, the weevil thrives in wet and warmish weather, which hardly has been the case this winter."

Specimens for the experiments were taken from McNairy County terrain and conducted by staff entomologist James H. Locke at Memphis.

## NEW MEXICO SHIPMENTS

STATE COLLEGE, N.M. — Fertilizer shipments in New Mexico during the last three months of 1955 totaled 2,553 tons, according to the state Feed and Fertilizer Control Office.

## VEGETABLE ACREAGE

(Continued from page 1)

for 16 fresh summer vegetables totaling 484,230 acres to be available for harvest (compared with 492,950 acres for harvest in 1955); for 15 fall vegetables the guides total 267,900 acres to be available for harvest (compared with 269,480 acres in 1955); for two summer melon crops the guides total 424,200 acres to be available for harvest (compared with 464,270 acres in 1955); and for sweetpotatoes the guide is 334,400 acres to be available for harvest (compared with 357,400 acres in 1955).

The guides for vegetables for processing are on a planted acreage basis. For nine vegetables for commercial processing, the guides total 1,680,810 acres to be planted (compared with 1,650,120 acres planted in 1955).

Specific acreage guide recommendation for each commodity follows:

Commodity	Percentage changes in 1956 acreage for harvest compared with 1955
Summer vegetables:	
Beans, Lima	— 5
Beans, snap (early)	— 5
Beans, snap (late)	No change
Beets	— 5
Cabbage (early)	No change
Cabbage (late)	No change
Carrots (early)	— 10
Carrots (late)	No change
Cauliflower	No change
Celery (early)	No change
Celery (late)	+ 5
Corn, sweet (early)	No change
Corn, sweet (late)	No change
Cucumbers (early)	— 5
Cucumbers (late)	+ 5
Eggplant	— 5
Lettuce	+ 5
Onions (early)	— 10
Onions (late)	— 5
Peas, green	No change
Peppers, green (early)	— 5
Peppers, green (late)	— 5
Spinach	No change
Tomatoes (early)	— 5
Tomatoes (late)	+ 5
Summer melons:	
Cantaloupes (early)	No change
Cantaloupes (mid)	— 5
Cantaloupes (late)	— 5
Watermelons (early)	— 10
Watermelons (late)	— 10
Fall vegetables:	
Beans, Lima	No change
Beans, snap (early)	No change
Beans, snap (late)	— 5
Broccoli	— 5
Cabbage (early)	+ 10
Cabbage (late)	+ 10
Carrots (early)	+ 5
Carrots (late)	+ 5
Cauliflower (early)	No change
Cauliflower (late)	— 5
Celery (early)	+ 5
Celery (late)	— 5
Corn, sweet	No change
Cucumbers (early)	No change
Cucumbers (late)	— 10
Egg plant	No change
Lettuce (early)	No change
Lettuce (late)	— 10
Peas, green	No change
Peppers, green	— 5
Spinach (early)	No change
Spinach (late)	+ 10
Tomatoes (early)	— 5
Tomatoes (late)	++
Sweet potatoes	++

Percentage change in 1956 planted acreage compared with 1955

Commodity	Percentage change in 1956 planted acreage compared with 1955
Vegetables for processing:	
Beans, Lima	No change
Beans, snap	— 10
Beets	No change
Cabbage for kraut	+ 10
Corn, sweet	+ 5
Cucumbers for pickles	+ 10
Peas, green	+ 5
Spinach	— 5
Tomatoes	++

\*Beets: Acreage for harvest 10% less in New Jersey and same in Pennsylvania as in 1955.

†Cucumbers, early summer: Acreage for harvest 20% less in Maryland and Delaware and equal to 1955 in other states.

‡Green peppers, early summer: Acreage for harvest 20% less in North Carolina and equal to 1955 in other states.

§Tomatoes, early summer: Acreage for harvest 20% less in California and 5% less than in 1955 in other states.

¶Snap beans, late fall: Acreage for harvest 10% less in Florida and equal to 1955 in Texas.

\*\*Green peppers: Acreage for harvest 20% more in Virginia and equal to 1955 in Texas and Florida.

††Tomatoes, late fall: Acreage for harvest 5% less in Florida and equal to 1955 in Texas.

‡‡Sweet potatoes: Acreage for harvest 10% less in Louisiana and 5% less in other states than in 1955.

§§Tomatoes for processing: Planted acreage 10% less in California and equal to 1955 in other states.

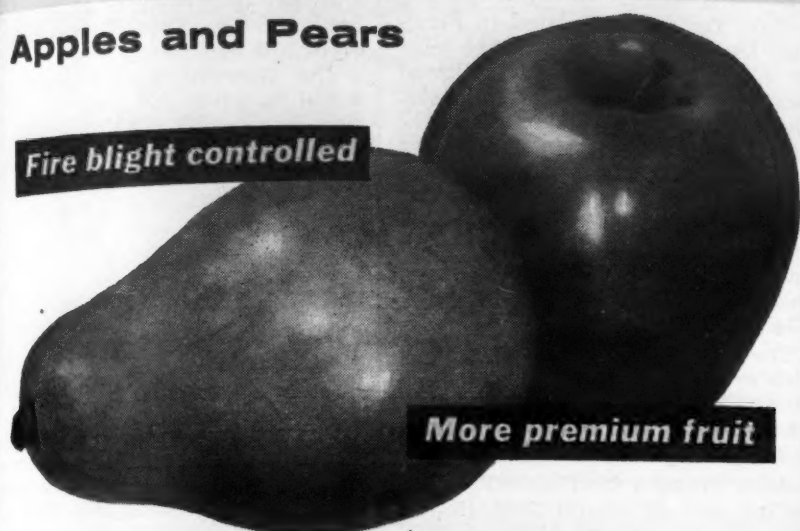
## HORTICULTURIST RESIGNS

GAINESVILLE, FLA.—Dr. Walter Reuther, 44, head of the department of horticulture for the Florida Agricultural Experiment Station, College of Agriculture and Agricultural Extension Service since June, 1953, has resigned. On Feb. 1 he will become chairman of the horticultural department of the University of California Citrus Experiment Station.



## NEW ANTIBIOTIC SPRAY GIVES 2-WAY CROP PROTECTION, 2-WAY BENEFITS

### Apples and Pears



**Fire blight controlled**

**More premium fruit**

(Spray trees every 3 to 5 days during blossom time. 50 ppm for apples, 30 ppm for pears)

### Potatoes

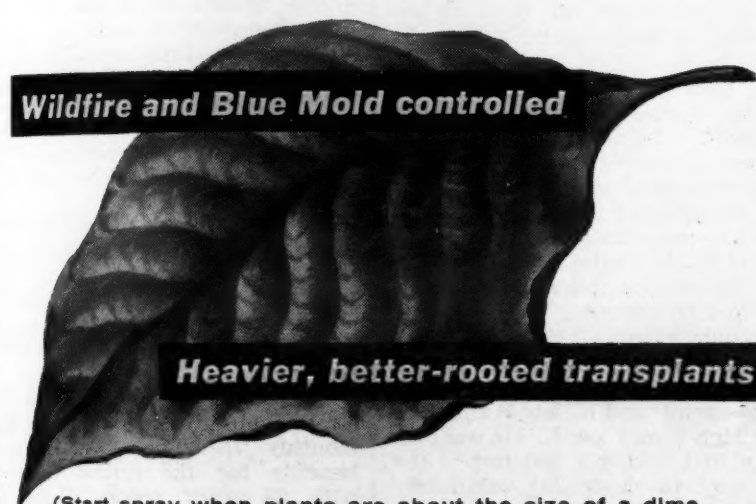


**Blackleg and Soft Rot controlled**

**Yields increased up to 72 bu. per acre**

(Soak cut seed pieces in 100 ppm solution for approximately 1 minute)

### Tobacco

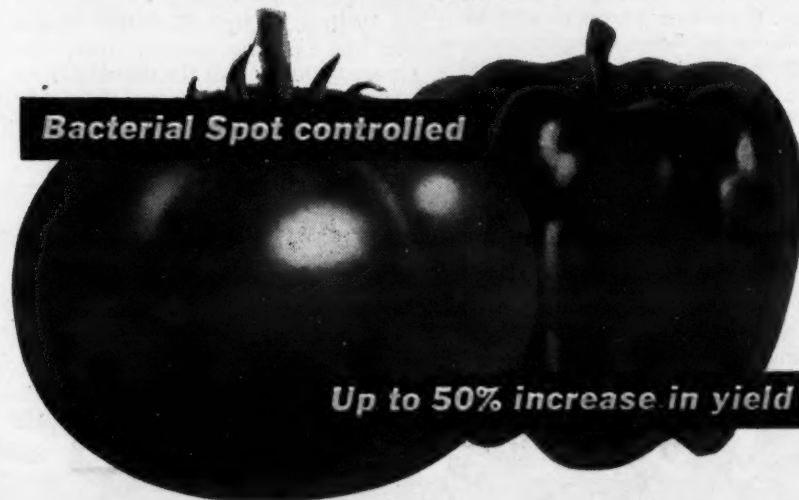


**Wildfire and Blue Mold controlled**

**Heavier, better-rooted transplants**

(Start spray when plants are about the size of a dime. Spray seedbeds with 100 ppm solution weekly)

### Tomatoes and Peppers



**Bacterial Spot controlled**

**Up to 50% increase in yield**

(Start sprays when first true leaves appear in seedbed. Spray plants with 200-ppm solution every 5 days until fruit is formed)

# Agri-mycin\*

## CONTROLS DISEASE INCREASES YIELDS



**Pfizer**

These results, from controlled experiment station tests with cooperating growers, show how the extra yield at harvest time can pay many times over the small cost of protecting plantings against destructive outbreaks of bacterial plant diseases this spring.

The bigger yield from Agri-mycin-treated plots is also of *better quality*. Larger fruit, with far less spotting, scarring or cracking brings a higher price per pound or per bushel.

**Write for further information. Just tell us what crop or crops you are interested in.**

Chas. Pfizer & Co., Inc.  
Dept. C1-17  
Brooklyn 6, N. Y.

Agri-mycin is the *only* antibiotic plant spray containing both streptomycin and Terramycin®. The Terramycin serves a three-fold purpose. Through synergistic action it actually increases the effectiveness of the streptomycin. It promotes healthy, vigorous plants, thereby increasing yield. It gives orchards and plantings more lasting protection against disease by retarding development of resistant strains of the causative organisms.

Chas. Pfizer & Co., Inc.  
Dept. C1-17, Brooklyn 6, N. Y.

Please rush me full information on Agri-mycin and name of distributor in my area.

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Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Major crops interested in \_\_\_\_\_

Agri-mycin is now available from regular suppliers of agricultural spray materials in 9.34 oz. jars which make up to 330 gallons of spray. Economy size 25 lb. drums save the large orchardist or grower 20%. A popular priced small 2.4 oz. jar is also available for tobacco growers' seedbed protection.

\*Pat. pending

©Terramycin Brand of Oxytetracycline



# Value of Soil Testing Praised At Annual Meeting of Georgia Plant Food Educational Society

ATHENS, GA.—J. E. Nunnally of the Georgia Cotton Producers Assn., Atlanta, was elected 1956 president of the Georgia Plant Food Educational Society during the group's annual meeting at the University of Georgia in Athens, Jan. 17. He succeeds W. W. Harley of the Southern Fertilizer and Chemical Co., Savannah, who was named new director-at-large.

J. Fielding Reed, American Potash Institute, Atlanta, retained the appointed position of secretary-treasurer for another year.

New vice presidents chosen from the four areas of the state are W. W. Doughty, Augusta Fertilizer Co., Augusta, Northeast district; W. L. Baughcum, International Minerals and Chemical Corp., East Point, Northwest; David W. Reed of Evans, Reed, and Williams, Sylvania, Southeast, and Loy Everett, Virginia-Carolina Chemical Corp., Albany, Southwest.

Two new directors from each district also were selected by the society. They are C. R. Mason of Mason Gin and Fertilizer, Madison, and Malcolm Rowe of Rowe Warehouse and Fertilizer Co., Athens, Northeast; Julian Reames, Armour Fertilizer Works, Atlanta, and Henry Mauldin, Calhoun fertilizer dealer, Northwest; John Cope, Reliance Fertilizer Co., Savannah, and George Brantley,

Blackshear Manufacturing Co., Blackshear, Southeast, and John Porter, Royster Guano Co., Macon, and John Allman, Southern Cotton Oil Co., Macon, Southwest.

Directors with another year on their terms are P. D. Temple, Danielsville dealer, Northeast district; L. Ralph Boynton, U.S. Potash, Atlanta, Northwest; Roy A. Hendricks, Hendricks Fertilizer Co., Metter, Southeast, and Ridley Monk, Southeast Liquid Fertilizer Corp., Albany, Southwest.

Some 350 active society members, agricultural leaders, bankers and others interested in plant foods attended the fifth annual meeting of the group. In addition to electing new officers, they heard talks and panel discussions on topics relating to the fertilizer industry.

The one-day program began with an afternoon session and extended through a banquet that night. The following day, many Society members joined agronomists from throughout the state for the annual meeting of the Georgia Section of the American Society of Agronomy.

With L. Ralph Boynton presiding at the opening session, the visitors were welcomed to the university campus by Dr. C. C. Murray, dean of the College of Agriculture and coordinator of agricultural activities.

Pointing out that Georgia farm-

ers have "only scratched the surface in use of commercial fertilizers," Dean Murray told the society members there is a wonderful opportunity for further use of these products in the state.

"Use of commercial fertilizer will continue to increase as farmers continue to adopt better practices," the welcoming speaker continued.

"Soil Testing as Related to Fertilizer Usage in Georgia" was the topic of a panel discussion that followed Dean Murray's opening remarks. Members of the panel were R. L. Carter, Coastal Plain Experiment Station, Tifton, leader; O. E. Anderson, Georgia Experiment Station; H. F. Perkins, College Experiment Station; Frank Boyd, Virginia-Carolina Chemical Corp., Columbia, S.C., and S. L. Welborn, Jackson County (Ga.) agent.

The discussion participants were high in their praise of soil testing as "the only answer" to the question of what fertilizer can be most beneficial to any particular soil.

After giving a brief history of soil testing and citing progress in the field, Mr. Carter said more research is needed, particularly in determining nitrogen content and need in soils, because of the degree of fluctuation this element has shown, under varying conditions, in the same soils.

Mr. Anderson, discussing correlation work in soil sample analysis, stressed the fact that the data gathered in testing the soil must be interpreted properly for the farmer to benefit by it.

Mr. Perkins, who like Mr. Carter and Mr. Anderson has worked with soil testing in Georgia experiment stations, discussed the relationship between phosphorus and potassium in soils. He followed the pattern of several other speakers on the program in using slides to illustrate his talk.

Continuing the discussion of potassium and phosphorus, Mr. Boyd said the requirements of these two elements can be satisfied in any Georgia soil with one of three types of fertilizers—even P and K, low P and high K, or high P and low K. He went on to say that taking a soil test is the only way to determine accurately which one of the three to use.

Pointing out that soils vary greatly even within the same geographic region of the state, Mr. Boyd said, "soil testing is the tool that translates regional data into useful information for the individual farmer."

Turning to nitrogen, he agreed that it is a much harder element to interpret successfully through tests, but added that farmers generally are not using enough nitrogen.

Speaking from the county agent's point of view, Mr. Welborn said he is "thoroughly sold on soil testing," but that it is sometimes difficult to get farmers to see its advantages.

W. R. Allstetter, vice president of the National Plant Food Institute, gave a slide-illustrated talk on some of the activities of his organization. He praised the society members, saying the work of their organization had gained national fame in plant food circles.

Some of the slides shown by Mr. Allstetter pointed out that fertilizer costs have gone down in recent years in relation to farm prices.

W. W. Harley presided over an explanation of the activities of the Georgia Plant Food Educational Society. The grazing system and feed production contests conducted by the society were discussed by J. Ralph Johnson, agricultural extension service agronomist, and Dr. Francis E. Johnstone, Jr., horticulture department head, University of Georgia College of Agriculture, talked about the horticultural essay contest.

Following the business session, the afternoon program was closed with another panel discussion—"Interrelation of Plant Breeding and Soil

Fertility." Participating were Dr. H. D. Morris, agronomy professor, and A. R. Brown, assistant agronomy professor, College of Agriculture, and Dr. G. W. Burton, Coastal Plain Experiment Station, Tifton.

These speakers, employing charts and slides, showed how there is a definite relationship between use of certified seed and use of fertilizer and that crop yields where both are used far exceed those where either or both is excluded.

The Georgia Plant Food Educational Society, a non-profit organization incorporated under the laws of Georgia, Oct. 30, 1951, is made up of 348 persons engaged in the manufacture and distribution of fertilizers in Georgia.

## Negotiations Complete On Monsanto Pension, Insurance Benefits

ST. LOUIS—Completion of negotiations on a multi-plant program of pension and group insurance benefits for hourly employees has been announced by Monsanto Chemical Co., the International Chemical Workers Union, the International Union of Electrical, Radio and Machine Workers and the Oil, Chemical and Atomic Workers.

A five-year agreement on pensions and a three-year agreement on group insurance provisions have been signed, completing negotiations less than five months after they were initiated on Sept. 8, 1955, three months prior to the AFL-CIO merger.

More than 7,300 hourly employees at 14 Monsanto plants are covered by the agreements which are effective Jan. 1, 1956, and Feb. 1, 1956, respectively.

The new agreements substantially liberalize Monsanto's pension and group insurance programs for hourly employees. The new pension plan includes a company-financed benefit of \$2.25 a month for each year of service.

The company's 1950 plan provided a minimum retirement income of \$120 monthly including social security benefits for the retired employee with 25 years' service. Under the new plan, such a veteran will receive a minimum monthly retirement income of \$164.75. A contributory plan also is provided, granting additional benefits.

Early retirement and total and permanent disability pension provisions also are liberalized in the new agreement. Hourly employees may retire at age 55 with proportionally reduced pension benefits. The minimum pension for eligible workers totally and permanently disabled is increased 33 1/3% over the previous plan.

Group hospitalization and insurance provisions, part of a plan prepared especially for Monsanto, have been increased without additional cost to employees under the agreement. Increased allowances for hospital room and board, an improved surgical schedule and the adding of diagnostic X-ray coverage for outpatients are included in the plan. It also provides a limited hospital and surgical coverage for retired employees at no cost to them and increased life insurance benefits for eligible pensioners.

## Most Troublesome Cattle Pests Reported

NEW ORLEANS—According to a survey of members of the American National Cattlemen's Assn. most damaging insect pests afflicting the herds are lice, cattle grubs, screw-worms and the hornfly. The screw-worm is the most troublesome pest in the South.

Results of the survey were reported recently at the annual convention of the association by Alan Rogers, Ellensburg, Wash., chairman of the group's research committee.

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Lee Conahan

**INS NPF**—Lee Conahan joined the staff of the National Plant Food Institute Jan. 23 as an editorial assistant. He succeeds Peter C. Crooks who left NPF recently to join the staff of the Nitrogen Division, Allied Chemical & Dye Corp. Mr. Conahan will assist in editing the weekly News Report to NPF members, and NPF's quarterly magazine, Plant Food Review. He also will assist in editing and producing special publications of the Institute. Mr. Conahan is a graduate of South Dakota State College in rural journalism and printing. Since graduation he has been advertising manager of the Brookings (S.D.) Register, Brookings, South Dakota. He is a veteran of the Korean War.

### Council Publishes New Edition of Accident Prevention Manual

**CHICAGO**—The National Safety Council has published a new and extended edition of its Accident Prevention Manual for Industrial Operations.

Designed as the basic text for the safety man's shelf, this 3rd edition of the manual includes all the information needed to organize a comprehensive safety program and keep it going, the council says. In addition there are many informative chapters covering the specific types of hazards found in most industrial operations.

The manual tells how to set up safety committees, maintain interest in accident prevention activities and develop favorable publicity and public relations. There are chapters on accident records and injury rates, accident investigation and costs and workmen's compensation insurance.

The Accident Prevention Manual is priced at \$13.50 and may be purchased from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill. For those desiring more complete information on the subject matter covered, a descriptive folder will be sent on request.

### Oklahoma Crop Improvement Group Meets

**OKLAHOMA CITY**—The Oklahoma Crop Improvement Assn. held its annual two-day meeting here recently. Seed certification, pest control, irrigation and fertilizers were featured topics. Prominent speakers were Dr. Hugo Grauman, research agronomist, Beltsville, Md., whose paper was "Alfalfa Improvement and Its Uses"; Robert H. Garman, international president of the group whose topic was seed certification from a state and national viewpoint; Parks Yeats, head of the feed and fertilizer division, state department of agriculture, and Lane Wilcox, executive vice president of the Southern Seeds Assn., Shreveport, La.

### Second Annual NPF Farm Communications Award Announced

**WASHINGTON**—Announcements of the second annual Agricultural Communications Award, presented by the National Plant Food Institute and the American Association of Agricultural College Editors, have been sent to extension and experiment station editors and other key personnel at the land-grant colleges.

The purpose of the award is to provide an opportunity for a member of the association, who has shown notable growth in competence and achievement in agricultural communications, to receive advanced professional improvement training in some phase of agricultural communications.

The award consists of \$500 presented by NPF and an attractive scroll.

The judges will be C. M. Ferguson, administrator, Federal Extension

Service, chairman; John McDonald, Station WSM, Nashville, president of the National Association of Television and Radio; Farm Directors, and Tom Anderson, editor and publisher of Farm and Ranch and president of the American Agricultural Editors' Assn.

Mrs. Anna Jim Erickson, State College of Washington, was the first winner.

### Seed Dealers Elect

**LITTLE ROCK**—The Arkansas Seed Dealers Assn. elected officers Jan. 19. They include Wayne Bennett of England, president; Jerry Hays of Wilson, vice president; Dr. L. M. Humphrey of Scott, secretary and treasurer, and L. G. Black of Corning, representative to the State Plant Board. The association voted to offer \$1,000 in prizes for production on five-acre cotton plots planted to registered or certified seed. The contest is open to any farmer in the state.

### E. L. Collins Heads Chemical Sales Group

**NEW YORK**—E. L. Collins, iodine sales manager for Chilean Nitrate Sales Corp., is the new president of the Salesmen's Association of the American Chemical Industry, Inc. Mr. Collins succeeds J. F. Henry of J. F. Henry Chemical Co.

Vincent L. Rebak, New York sales manager of Grace Chemical Co., was elected vice president. Treasurer is Robert J. Roberts, New York sales representative of Emery Industries, Inc. James E. Spencer, eastern sales manager of Harshaw Chemical Co., is secretary.

Newly installed directors include Joseph R. Augello, Washine National Sands, Inc.; Charles E. Griffith, R. W. Greef & Co.; Lester E. Johnson, International Nickel Co.; W. Gilbert Kayser, Jr., Sharples Chemicals, Inc., and Herman M. Schulman, Washine National Sands, Inc.

Installation of new officers and directors took place here on Jan. 18.

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Put quality into your formula if you would turn out a quality product . . . the kind that makes your fertilizer business grow, as well as your customers' crops.

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## CORN BORER

(Continued from page 1)

a Missouri cotton grower brought a wilted plant to University of Missouri entomologists and the plant was found to be infested with the corn borer—its entry into the stalk causing the wilting. In additional instances, entry was generally made in the upper third of the cotton stalk.

Later surveys also showed that a few infested stalks could be found in fields throughout the Missouri cotton-growing area. Borers seemed to move about considerably when feeding on cotton stems as several empty tunnels were found in infested stalks.

In no case noted was the borer of economic importance in Missouri cotton fields. The highest stalk infestation for any one field checked in Southeast Missouri was 1.2%. Average stalk infestation for the entire cotton-growing area was slightly under 0.05%.

## Rain, Heavy Snow Ease Drouth in Mid-South Area

Rains and heavy snow brought relief to drouth-damaged grazing crops and winter gardens in Mississippi, Arkansas and Missouri, agricultural extension officials said last week.

J. S. Therrell, Mississippi extension forester, said dangers from grass and woods fires also were abated.

Farming activity in the state generally consisted of sub-soiling land and taking of soil samples for fertilizer recommendations on 1956 crop land. Much interest is being shown in home gardening, according to K. H. Buckley, associate extension horticulturist.

Precipitation caused a slowdown to farming activity in Arkansas.

In some sections, stock ponds were becoming depleted and farmers had been having to truck water to livestock. Melting snow is expected to relieve that situation in most cases,

said the Agricultural Extension Service.

However, all the news wasn't on the cheerful side for Arkansas farmers.

T. E. Atkinson of Little Rock, Extension Service economist, said in a speech at an agriculture credit conference that a plunge in farm incomes is almost certain to occur in Arkansas this year. The nationwide plunge missed the state last year, he said.

Weather in Southeast Missouri was an important factor in farming plans for the area. Sleet and snow produced needed moisture for land bedding and disking, extension officials said.

## ASC APPOINTMENTS

LARAMIE, WYO. — The appointment of Marvin Young, Buffalo, as chairman, and Harold L. Jolley, Lovell, as a member of the Wyoming State Agricultural Stabilization and Conservation Committee has been announced by the U.S. Department of Agriculture.

## WASHINGTON WIRE

## Railroads Not Likely to Get Full 7% Tariff Increase

By JOHN CIPPERLY  
Cropplife Washington Correspondent

WASHINGTON — Industry groups who are opposing the 7% increase in rail freight rates asked by the carriers generally feel now that the Interstate Commerce Commission will not grant the request in full.

The decision of ICC will be handed down Feb. 25 after five days of oral hearings.

While most freight user groups are swinging their full weight in opposing the higher rates, it is felt that coordinated and organized protests by the plant food industry may carry the day against granting of the full increase.

The fertilizer industry is seen as unique among those fighting the increase. Plant food sources here point out to Croplife that the industry is in a poor position to either absorb or pass on higher freight rates. They say that the industry is earning less on its sales dollar than are the railroads.

These spokesmen say that the industry is not on record against rate increases which are necessary, for example, to cover higher wages paid by the carriers, but that they object to higher rates that will be plowed back into capital investment by the roads.

Meanwhile, it is pointed out that passing on rate increases to customers will only add to farm production costs at a time when farm suppliers are under increasing criticism for these costs.

One hopeful view here is that ICC will hold any increase to not more than one needed to cover wage rate increases by the roads.

## Anniversary of Food, Drug and Cosmetic Laws Launched

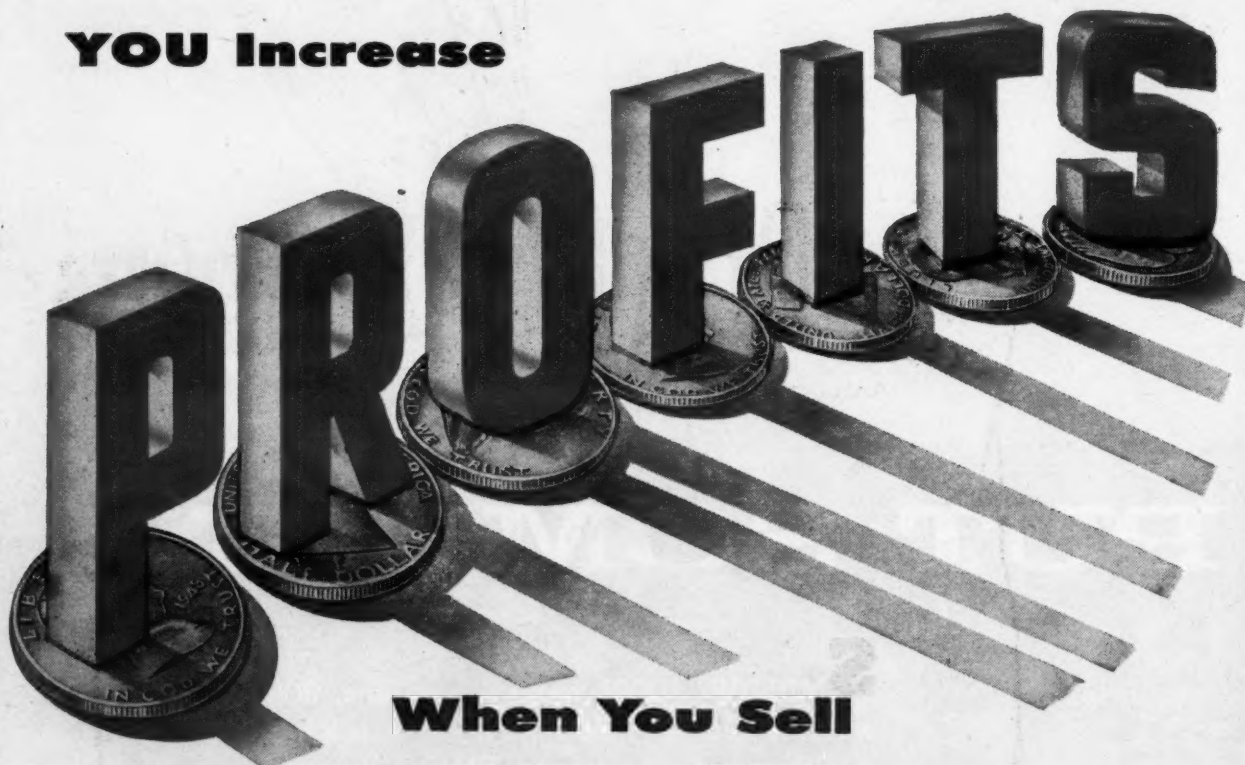
WASHINGTON — The golden anniversary celebration of Federal Food, Drug and Cosmetic Laws got off to a good start at an opening luncheon in Washington recently. More than 150 lawmakers, industrial leaders, food and drug officials, consumer representatives and members of the press heard the 1906 Acts (first Food and Drugs Act and Meat Inspection Act) described as perhaps the most important peacetime legislation to have been passed since the country's founding.

This note was sounded by Rep. Percy Priest, chairman of the House Interstate and Foreign Commerce Committee, by Bradshaw Mintner, assistant secretary of health, education and welfare, and by George L. Larrick, commissioner of the U.S. Food and Drug Administration, all of whom spoke.

Mr. Larrick said the 50th anniversary celebration marked "50 years of progress, a dynamic thing in continuing, living movement." He called attention to the specific purposes of the commemoration: To further public understanding of the food and drug laws; to inform the public of their benefits to both industry and consumers; to give public recognition to our industries which have made our food, drug, chemicals and cosmetics the best in the world; through public education to further strengthen the effectiveness of food and drug measures at all levels of regulation.

L. Rohe Walter, special assistant to the postmaster general, announced that a special stamp will be issued to commemorate the Golden Anniversary. Stamps in the number of 11 million will be placed on sale by the Post Office Department June 27, 1956.

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Lion Aqua Ammonia—Ammonia content about 30%—other grades to suit your requirements.

Lion Ammonium Nitrate Fertilizer—Improved spherical pellets. Guaranteed 33.5% nitrogen.

Lion Nitrogen Fertilizer Solutions—Various types to suit your particular manufacturing needs.

Lion Sulphate of Ammonia—White, uniform, free flowing crystals. Guaranteed 21% nitrogen.

Retailers who market Lion nitrogen fertilizers are enjoying sales increases and expanding profits, because the Lion brand is being continuously pre-sold to farmers—and retailers reap the benefits.

Throughout the year, Lion advertising appears in leading state farm publications, and in Farm & Ranch-Southern Agriculturist, Prairie Farmer, Progressive Farmer, and Wallaces' Farmer & Iowa Homestead. These advertisements tell farmers—again and again—the facts about plant foods: that the farmer who uses the proper kinds and amounts of commercial fertilizers will increase his yields and his profits. This advertising sells fertilizers, for Lion and for you!

Lion's two giant chemical plants have the capacity to assure you a steady supply of the most popular and economical types of nitrogen fertilizers. In fact, Lion is the world's largest manufacturer of prilled ammonium nitrate, and one of the industry's leaders in producing other nitrogen fertilizer materials.

It's easy to sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. And easier selling adds up to more profits for you.

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SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN  
Croplife Merchandising Editor

Avoid using credit as a sales tool, warned a business consultant who addressed a group of farm supply dealers recently.

Credit must not be a sales promotional tool if you want your business to remain sound, this authority said. Credit is a favor to your customers because they are actually placing into use products which belong to the dealer. Indirectly, they are using the dealer's money.

Get rid of old unpaid accounts. Don't be afraid to ask for your money, the speaker told his audience. He cited the case of one dealer who had two unpaid accounts totaling \$60,000. Being a consultant to

one of the dealer's suppliers, the speaker saw the dealer personally and advised him to drive out to see the two farmers. The dealer did and he was told by the farmer who owed \$32,000, "Why, I didn't realize you needed that money. Why didn't you ask me for it? Come in the house and we'll settle that bill." The other farmer who owed \$28,000 said practically the same thing to the dealer. He likewise agreed immediately to a settlement.

The speaker had some other words of advice for the dealers. He urged them to eliminate duplicate lines. Having two or more lines of a similar item merely makes the inventory bulky and is certain to result in one line selling better than the other which begins to collect dust. If old stocks don't move, get rid of them.

## Turn Over Five Times

Five times a year the stock should be turned over in a farm supply store, he suggested. A 3% net profit on sales is a good goal. Try selling hardest to the top 50% of the farmers since those account for about 90% of our production, he said.

The best products in the world can't be sold by incompetent salesmen, the consultant said. The good salesman will ask the farmer, "How's

(Continued on page 12)

## Farmers Vote Cotton Quotas by Big Margin

WASHINGTON — Final results of the national referendum held Dec. 13, 1955, on marketing quotas for the 1956 crop of upland cotton show that 93% of the farmers voting approved the quotas, the U.S. Department of Agriculture reported recently. This is the same as the preliminary percentage announced Dec. 14. The official tabulation shows that of the 292,488 growers voting, 271,887 favored marketing quotas and 20,601 opposed them.

Official results of the referendum on marketing quotas for the 1956 crop of extra long staple cotton, held on the same day as the referendum on upland cotton quotas, show 1,115 growers voting, with 90.1% of the votes favoring quotas and 9.9% opposed.

Since marketing quotas on both upland and extra long staple cotton have been approved by more than the necessary two-thirds of those voting in each referendum, the quotas will continue in effect for the 1956 cotton crops.

## Scientist Optimistic About Progress of Nematode Control

COLUMBIA, S.C. — "A lot of progress" in control of nematodes is foreseen by Dr. Quintin L. Holde- man, of the Pee Dee Experiment Station near Florence, S.C.

At present, however, the "only hope" of effective control is the use of soil fumigants or nematocides where they are economically feasible, he told the state convention of Young Farmers of America in Columbia recently.

"Soil fumigants have proven to be a profitable aid in the production of high money crops such as tobacco and vegetables; whether or not we can add the cost of fumigation to the cost of production of cotton and lesser money crops and still stay in business is a problem," he noted.

Progress is being made, but "We still have a lot to learn" about nematodes, he said. One variety, the sting nematode, can break the resistance of a wilt resistant cotton, he said, declaring that this had been proved at the Pee Dee Experiment station.

The problem is: "Control the nematode and the inherent resistance of the cotton will take care of the rest," he said.

The Pee Dee station's scientists are working on new nematocides, some of which "look very promising. However, it takes time to get information," and to formulate recommendations, he said.

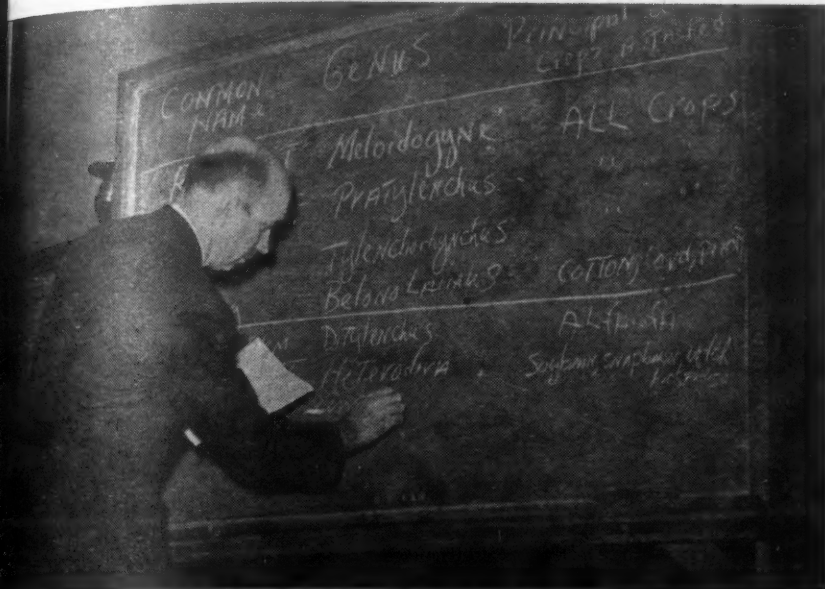
## Conservation Official Wins Spencer Award

FRANKFORT, KY. — George Carr Ganter, assistant to the Kentucky conservation commissioner, has won the top award in the annual soil conservation speech competition sponsored by the Spencer Chemical Co.

Mr. Ganter will receive an expense-paid trip to the National Association of Soil Conservation Districts' meeting at Boston, where he will be awarded \$1,000.

## MAN OF THE YEAR

GAINESVILLE, FLA. — Willard M. Fifield, provost for agriculture at the University of Florida has been named "Man of the Year in Service to Florida Agriculture." The honor was bestowed on him by the Progressive Farmer.



NEMATOCIDES DISCUSSED — J. N. Sasser, North Carolina State College, uses blackboard to bring out points in his talk on nematode control during the North Carolina Pesticide School held at Raleigh, Jan. 10-11. Mr. Sasser reported on the plant parasitic nematode situation in the state of North Carolina.

## 200 Hear Reports on Latest Research Results at North Carolina Pesticide Meeting

RALEIGH, N.C. — The annual North Carolina Pesticide School held Jan. 10-11, attracted more than 200 commercial pesticide manufacturers, chemical formulators, agricultural chemical dealers, county agents and other interested students. The meeting was held at North Carolina State College under the direction of the college's School of Agriculture and the extension division.

Among those attending the eighth annual school were representatives from North and South Carolina, Florida, Georgia, Virginia, Tennessee, Maryland, Washington, D.C., New York, New Jersey, Pennsylvania and Texas. At least one foreign visitor was in the audience, a county agent from Germany.

The audience heard reports on pesticides from the college's staff members in entomology, agronomy, plant pathology, and agricultural engineering. Off-campus speakers included Drs. A. S. Crafts and W. A. Harvey, both of the University of California; J. T. Coyne of the U.S. Department of Agriculture; and L. C. Whitehead of the U.S. Department of Agriculture.

Discussions were centered around herbicides, fungicides, insecticides and rodenticides, with speakers covering each of these phases of the pesticide field.

R. L. Lovvorn, director of instruction for the college's School of Agriculture, opened the program with a welcoming address. W. G. Westmoreland, extension agronomy specialist, presided.

Dr. Crafts began the discussion of herbicides, discussing the topic of "A Research Approach to Weed Control." He pointed out two fundamentally different approaches to weed control: the empirical and the physiological methods.

Concluding his talk, Dr. Crafts stated, "If we understand the physiology of action of a herbicide, then we can make an intelligent approach to its use and by-pass a large number

of the trials demanded by the empirical approach."

Dr. Harvey, extension specialist in weed control, followed with a discussion of the California extension weed program. Three State College specialists spoke during the remainder of the morning session.

Dr. G. C. Klingman, agronomy specialist, commented on the characteristics and control of wild garlic using color slides to illustrate his talk. "Mowing every Saturday will reduce the garlic about 52%," he said.

According to Dr. Klingman, three control methods have promise. They are: (1) the use of repeated treatment of 2,4-D, (2) in dormant grasses, a spray of maleic hydrazide, and (3) in small grain, a combination of high nitrogen fertility plus 2,4-D.

Tests covering three years in cotton were described by Orvin E. Rud, who has conducted research in peanuts, soybeans, cotton, and forage crops. According to Mr. Rud, indications are that farmers would be sufficiently safe using either Chloro IPC or "Karmex DL" as pre-emergence treatments under conditions he described.

Rodenticides and pointers on field mouse control were discussed by L. C. Whitehead, rodent control specialist. Mr. Whitehead advised rodent control investigators or operators to become familiar with the characteristics of all useful control materials in order to select the one or ones that best fit each particular circumstance.

A later session, presided over by H. R. Garriss, extension plant pathologist, was devoted to fungicides and nematocides.

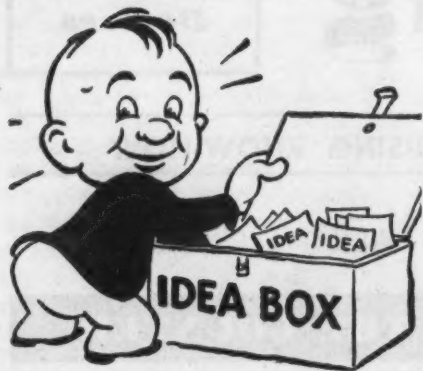
T. T. Hebert, researcher in small grains, opened the program with a discussion of "New Research in Cereal Smut Control." He reported that there have been encouraging results for controlling loose smut on barley, an important fact due to a

(Continued on page 16)



# Better Selling

Richer Sales Fields for Dealers



## What's New...

### In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

#### No. 6366—Water Conditioner

The Packard Manufacturing Co. is marketing a new water conditioner that is claimed to eliminate and prevent scale and corrosion formations in boilers and water systems without the use of chemicals. The conditioner is for use on boilers, air conditioning and refrigerating systems and other industrial applications where water problems exist. The conditioner is manufactured in sizes handling from 6.5 to 1,760 gallons per minute for connection with corresponding standard iron pipe sizes ranging from 3/4 in. to 12 in. Larger sizes are also available. Secure more complete information by checking No. 6366 on the coupon and mailing it.

#### No. 6369—Termite Control

The Shell Chemical Corp. has prepared a new four-page booklet entitled "Termite Control with Dieldrin." It tells how to detect termites and, in a series of illustrations, shows how pest control operators control them with dieldrin. Three types of buildings are considered: Those with

crawl space between the floor and the ground, those with a concrete floor flush against the ground and those with basements. Dosage rates per square foot are also explained. The booklet includes a brief history of the pests, their social organization, and the extent of their yearly damage. One section deals with the resemblance of termites to "white ants" and gives hints on distinguishing between them. The use of dieldrin as a protection against termites in the soil is brought out in the final section of the booklet. Secure your copy by checking No. 6369 on the coupon and mailing it to Croplife.

#### No. 5380—Booklet on Salesmen

How the modern salesman works, what he does, and why, is portrayed in a 32-page booklet entitled "The Salesman Story" published by the Du Pont Company. It illustrates the vital function performed by the nation's five million salesmen and the vast sales effort that employs, directly or indirectly, perhaps 15 million men and women. It relates how the old-time drummer passed out of the scene to make way for men who, by their

selling, create new industries and new products that raise the standard of living for all. "The modern industrial salesman is a professional. Glad-handing and back-slapping are not his basic attributes," the documented booklet reports. The "new kind of salesman" must often be part scientist, part economist, or specialist in other fields. "He is mature, in experience and know-how, before he tries to sell." The booklet is available by checking No. 5380 on the coupon and dropping it in the mail.

#### No. 5379—Tax Booklet

"How to Save Money on Your Farm Income Tax" is the title of a new booklet prepared by the J. K. Lasser Tax Institute and offered free by the Nitrogen Division of Allied Chemical & Dye Corp. The booklet is written in clear, every day language to enable the farmer to grasp his tax deduction situation with a minimum of reading. Among subjects covered are: How to compute your farm income, forms to use, farmer's self employment income, declarations for farmers and crop damage payments. One section is entitled "Special Tax Saving Check List for Farmers." A free copy of the booklet may be secured by checking No. 5379 on the coupon and dropping it in the mail to this newspaper.

### Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

#### No. 6367—Movie

A 16 mm. sound and color movie has been produced by the Mackwin Co. to document the company's three years of research on its DDT granular product for controlling the European corn borer. The product is called by the trade name, Mackodee Granules G-20. The movie is available in a limited number and reservations for showing dates are now being accepted by the manufacturer. Secure more complete information about the movie by checking No. 6367 on the coupon and dropping it in the mail to Croplife.

#### No. 6368—Coated Containers

A new bulletin describing how insecticides and other hard-to-handle products which are detrimental to

steel containers can be packaged and shipped in standard size steel pails and drums is available without charge. The bulletin has been prepared by Bennett Industries, Inc. According to the company announcement, "Special protective coatings of linings are economically fabricated into the containers as they are manufactured." The statement continues that the company "offers a wide variety of the new lined steel containers called 'Hi-Bake' pails and drums which have phenolic, epon and vinyl resin linings to hold many products that previously caused trouble when shipped in steel." Secure the bulletin by checking No. 6368 on the coupon and mailing it to Croplife.

#### No. 6364—Catalog on Process Plants

Design, engineering, construction and initial operation of process industries plants by the Chemical Plants Division of Blaw-Knox Co. are outlined in a new catalog, entitled "Process Plants by Blaw-Knox." Illustrated with photographs of major projects, the brochure is designed to provide information on the diversity and scope of work undertaken and completed in the process industries field.

Subject matter of the 20-page publication covers the following industries: Fertilizers and pesticides; general industrial chemicals; fine chemicals and pharmaceuticals; petroleum and petrochemicals; plant rehabilitation and modernization, and others. Copies of the catalog, Bulletin No. 2514, are available upon request. Check No. 6364 on the coupon and a copy will be mailed to you.

#### No. 6362—Soil Moisture Indicator

The T. W. Prosser Co. is marketing a soil moisture indicator, called by the trade name, Irrrometer. It is claimed to automatically evaluate the many varying soil and climate factors and register available soil moisture continuously on an easy-to-read gauge. The instrument consists of a hollow porous cup attached to an air-tight, water-filled plastic tube and a vacuum gauge. As the soil dries, moisture is extracted from the porous cup into the soil, causing suction force (tension) to develop within the Irrrometer which registers on the gauge. After irrigation the reverse action takes place. Secure more complete details by checking No. 6362 on the coupon and mailing it to Croplife.

#### No. 6359—Fertilizer Mixer

Plant Foods, Inc., has announced its Chief mixing and blending unit for manufacturing of mixed fertilizers. The mixing unit is complete with push button control and incorporates many special features for economical plant installation and operation, the company claims. Production of the blender is being handled in cooperation with the Henderson Manufacturing Co., which also manufactures spreader bodies, bulk transport trucks and other allied equipment. Secure more complete details by checking No. 6359 on the coupon and mailing it to Croplife.

#### No. 6363—Formulators' Booklet

McLaughlin Gormley King Co. Inc., has prepared a booklet on the firm's product, Dry Pyroclide, a pyrethrum concentrate. The booklet, entitled Non Toxic and Low Residue Agricultural Insecticide Concentrate, and is available at no charge to agricultural insecticide formulators. The

Send me information on the items marked:

- |  |  |
|--|--|
| <input type="checkbox"/> No. 5360—Feeder             | <input type="checkbox"/> No. 6363—Formulators' Booklet |
| <input type="checkbox"/> No. 5369—Seed Treater       | <input type="checkbox"/> No. 6364—Catalog              |
| <input type="checkbox"/> No. 5379—Tax Booklet        | <input type="checkbox"/> No. 6366—Water Conditioner    |
| <input type="checkbox"/> No. 5380—Booklet            | <input type="checkbox"/> No. 6367—Movie                |
| <input type="checkbox"/> No. 6359—Fertilizer Mixer   | <input type="checkbox"/> No. 6368—Containers           |
| <input type="checkbox"/> No. 6361—Soil Drench        | <input type="checkbox"/> No. 6369—Termite Control      |
| <input type="checkbox"/> No. 6362—Moisture Indicator |  |

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS  
PERMIT No. 2  
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### BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

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booklet states that dusts made from the firm's product are safe to use right up to the time of harvest. Information in the booklet includes sections on storage and handling Dry Pyroclide, diluents or carriers, compatible insecticides or fungicides, mixing machinery, packing and storage of the product, labeling, registration, strengths and dosages and commercial applications. Information for manufacturers on the firm's product, P-M Dust Concentrate, is also included. Formulators may check No. 6363 on the coupon and mail it to secure the booklet.

### No. 5369—Seed Treater

A new automatic 150 bu.-per-hour liquid seed treater has been announced by Panogen, Inc. Smallest of the Panogen treaters, the new model JS-100 is said to offer the same "push button operation" and other features formerly available only in the firm's larger-capacity models. The electric motor, wire cord and plug are standard equipment. For non-stop treating of wheat, oats, barley, flax, rye, and similar seed, the liquid seed disinfectant can be delivered by connection hoses directly from the shipping container. Since the pump will deliver the liquid up to a 50-ft. height, it is even possible to keep the drum outside (the liquid doesn't freeze) or in a remote part of the building, it is claimed. The liquid may also be supplied from the drum by gravity or from an inverted bottle fitted to the top of the treater. Secure more complete details by checking No. 5369 on the coupon and mailing it to this publication.

### No. 6361—Soil Drench

A new product for the control of damping-off is being marketed by Panogen, Inc., an affiliate of the Morton Salt Co. The new product is a liquid chemical soil drench called Pano-drench, developed as a means for controlling damping-off and other soil-dwelling fungus diseases. The product is used in a dilution of one teaspoonful to 3 gal. water and is applied to the soil before planting by drenching the flat or flower pots thoroughly. Since no drying or leaching is necessary, seeding can begin within 24 hours after treatment of soil, the company states. The product is available in 1 oz., 4 oz., and 16 oz. bottles. One 4 oz. bottle makes 72 gal. of drench and treats approximately 150 to 200 flats of 2½ sq. ft. size, it is claimed. Secure more complete details by checking No. 6361 on the coupon and mailing it to CropLife.

### No. 5360—Feeder

The Omega Machine Co., division of B-I-F Industries, Inc., is manufacturing the Hi-Weigh, model 37, belt gravimetric feeder for continuously feeding dry materials at medium to high rates. This feeder, with a feature called Sens-A-Gram, has a super-sensitive controller which maintains accuracies well within + or - 1%, it is claimed. It offers built-in 100-1 variable speed transmission and a single power source with no auxiliary drives. Being introduced is a new line of gravimetric feeders of the loss-in-weight type for feeding a wide range of liquids and solids. Simplex and Duplex models are available in several sizes for feed rates from 1 lb./hr. to 60,000 lb./hr. Equipped with a "built-in memory," the feeder, with an accuracy of + or - ½% by weight, is available with totalizer, indicator or recorder, the company states. Check No. 5360 on the coupon and mail it to secure more complete details.

## Voluntary Fertilizer, Feed Tax Boosts Work of North Carolina State College

RALEIGH, N.C. — Farm people of North Carolina are voluntarily taxing themselves 5¢ a ton for fertilizer and feed they buy during the year and turning the money over to the State College of Agriculture here for use in expanding research on farm problems and speeding up distribution of findings to the farmers. A considerable portion of the funds raised is devoted to studies in the field of farm chemicals, where it is definitely returning dollars for nickels.

Originated by a far-sighted group of farm leaders from the Farm Bureau and Grange, this unique "Nickels-for-Know-How" plan was made possible by a 1951 legislative enabling act which requires that it must be approved by two thirds of the farmers on a referendum vote every three years.

The first test vote on Nov. 3, 1951, showed a 9-to-1 vote of 61,195 in favor of "nickels" with 7,099 against. In the second balloting it was again approved by an overwhelming 95%, or a 19-to-1 margin. This election took place on Oct. 15, 1954, the day that the disastrous Hurricane Hazel ripped through the eastern half of the state.

Anyone who uses feed and fertilizer is entitled to vote. The money, collected by the State Department of Agriculture from manufacturers, is remitted in full to the agricultural college. After considering recommendations of the dean of agriculture, the Agricultural Foundation, Inc., administrator of the fund, decided what projects are to receive the "nickels."

Since the plan took effect Jan. 1, 1952, it has produced an average of \$140,000 per year. While small in comparison to total federal and state appropriations for the college, this income has made it possible to start badly needed work or expand present programs.

Some 38 projects were under way, according to the North Carolina Experiment Station's latest annual report. Twenty of these, supported entirely by the "nickels" fund, were being carried on by part-time graduate assistants and another 18 by full-time staff workers.

Recounting instances of how the "nickels" project pays off, the station report tells how one specialist found a treatment to control green June beetle grubs which have been causing damage to pastures estimated at \$1,750,000 a year.

In a weed control project an agronomist among the 20 graduate assistants developed a procedure which, it was figured, could save Tar Heel farmers \$10 million each year.

"Nickels" also work for high school agricultural teachers, the report points out. A 4-page booklet, "Soil Fertility and Fertilizer," which combines information on this subject in one over-all reference volume, was prepared and distributed to 574 vo-ag teachers in the state.

Among the 18 full-time projects are, at present, four which involve farm chemicals, namely, field and forage insect control, nematodes, pesticide residues and weed control.

Other matters covered include tobacco, cotton and peanut crop improvement, Negro horticulture, poultry diseases, marketing methods and long-time rural development. Two workers are engaged on an information program which passes findings on to farmers.

In its method of operation the "Nickels-for-Know-How" plan is a unique achievement, which, in four years, has paid off well. In the tre-

mehdous and enthusiastic backing it gets from the farmers, it probably stands alone among the states, few of which, if any, the report claims, have experienced such wholehearted, voluntary support to their agricultural college.

### South Carolina Farmers Get 12,931 Tons of TVA Ammonium Nitrate

COLUMBIA, S. S.—The Farmers Cooperative Education Assn. of South Carolina allocated 12,931 tons of ammonium nitrate to South Carolina

farmers in 1955, the largest amount ever distributed in a single year, G. E. Hawkins, vice-chairman and treasurer, of Greenwood has reported.

The FCEA, a subcommittee of the South Carolina State Agriculture Committee, was organized in 1948 for the purpose of obtaining TVA ammonium nitrate for farmers of South Carolina.

The material is being used to promote a changeover from row crops to a grassland farming program in South Carolina, to promote the livestock industry in the state.

The material is used as a demonstration, supervised by the county agent in the county and reported through regular extension service channels. The FCEA is planning a few demonstrations of high nitrogen corn production in 1956, Mr. Hawkins said.



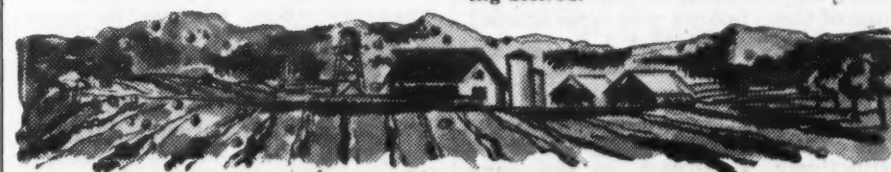
## Horse & Lion POWER

All crops need nitrogen. When they do . . .

### SELL HORSE & LION NITROGEN FERTILIZERS

Produced by a century-old chemical pioneer and leader, "Horse & Lion" nitrogen fertilizers are successfully used around the world. "Horse & Lion" nitrogen power for crop growth is proven. "Horse & Lion" nitrogens will prove successful for you and your trade. Be sure with "Horse & Lion" power. There are five "Horse & Lion" fertilizers for various requirements:

- "HORSE & LION" Calcium Nitrate: 15½% pure nitrogen, combined with about 28% available lime. Granulated.
- "HORSE & LION" Calcium Ammonium Nitrate: 20½% pure nitrogen (10¼% nitric and 10¼% ammoniac nitrogen) and approximately 33% calcium carbonate. Granulated.
- "HORSE & LION" Ammonium Sulphate Nitrate: 26% pure nitrogen (11% nitric and 15% ammoniac nitrogen). Granulated.
- "HORSE & LION UREA 44": 44% pure nitrogen. Coated pellets for dry use.
- "HORSE & LION UREA 46": 46% pure nitrogen. Pellets without coating for liquid application or dry use where fast dissolving desired.



For complete information and prices, contact your nearest "HORSE & LION" fertilizer headquarters.

## ATKINS, KROLL & Co.

ESTABLISHED 1906

DISTRIBUTORS, U. S. A.

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417 SOUTH HILL STREET, LOS ANGELES 13, CALIFORNIA

421 S. W. SIXTH AVENUE, PORTLAND 4, OREGON





A farmer wearing a grey fur cap and red mackinaw, came into the warm showroom of the farm supplies firm of Schoenfeld & McGillicuddy, stomping the snow from his buckled overshoes, and it melted quickly on the brownish asphalt tile floor. Oscar Schoenfeld, the frugal, cost watching partner, who sat at his neat desk figuring discounts, glanced coldly at the farmer, whom he recognized as Carl Becker, and at the watery mess the snow chunks were making on the floor.

"Hi, Oscar," grinned Becker, rubbing his red hand against his stubbled beard with a sound like crackling paper. "You still here? Thought sure you and the Missus would be in Florida laying on the beach soakin' up the sun."

"Huh," snorted Oscar. "We don't have time or money for such goings on. I have to stay here and watch expenses so we make enough to eat. Let others waste their money in Florida—not me."

"Oh, don't pile up too much of it, Oscar," chided Becker. "Have a little fun once in a while, otherwise you'll forget what fun is. I know. My kids insisted Ma and me take a trip to California two winters ago. I didn't want to go, but when I got out there I didn't want to come back. Stayed too long and was two weeks late with my spring plowing because of it."

"Yes, you always have to pay a price for fun," Oscar pointed out.

"But it's worth it," continued Becker. Then, "Oh, by the way I've got some room in the light truck today. I might as well take home those five bags of fertilizer I've got comin'."

"You've got five bags of fertilizer comin'?" Oscar asked slowly, always a stickler for exact details.

Carl Becker grinned. "Sure, didn't Pat tell you?"

"He didn't say a thing about it," Oscar said stubbornly. He was beginning to feel apprehensive, as he always did when he sensed that something was about to happen which would mean money going out of the company and not coming in. Would there never be an end to this sort of thing?

"Yup, that Pat sure is no piker. Believe me, when he wants a fellow to cooperate with him on a promotion deal, he is willing to pay. He is not one of these fellows who come around with soft soap stuff and try to get the world with a fence around it for nothing. Not Pat."

"A promotion?" Oscar asked in a chilly tone. His hands tightened instinctively, as though on the company's pocketbook. "When did this happen?"

"Oh, last Monday out on my farm," said Becker. "The day after that big snowstorm with the wind. You know I've got drifts seven feet high on some parts of my corn land and no snow at all on other parts. All on account of that high wind. She howled all night, and even blew a door off my machine shed."

"But the five bags of fertilizer,"

persisted Oscar. He was always impatient with anyone who told a story and wasted business time, especially long winded stories.

"Well, Pat told me he wanted to publish a big ad on fertilizer," Carl said slowly. "He wanted a picture of me standing by one of them big snow drifts, and then another picture of me and him standing on a piece of bare land, with snow in the distance."

"How crazy!" snapped Oscar. "How can pictures like that help sell fertilizer?"

"I thought he was crazy, too, until he explained the idea to me," returned Becker. "Pat said he was going to run those two pictures in his ad and tell us farmers that we kin get a lot of free nitrogen from snow, and to get as much of it as we can. But he also wants to say that you can't place that snow evenly over the land, as these two pictures will show."

"Huh," snapped Oscar again. "How foolish can a man get?"

"Then," went on Becker, "Pat said that he would put in that ad the fact that there's only nitrogen in snow and rain, but how about the potash and phosphorus? Just to make sure that corn land gets enough of all three elements they should buy well balanced fertilizer from you guys now for spring delivery and application."

"Old stuff," commented Oscar icily. "We sure could save the money for that ad. Pat's been tellin' farmers that story all year."

"But not in the same way," Becker said. "It kinda appealed to me and the old lady. And Pat said that if a farmer really wanted to save money he should mix insecticide with the fertilizer and put them both in at the same time."

"The five bags of fertilizer," Oscar

## OVER THE COUNTER

(Continued from page 1)

your corn doing? How's your cotton crop coming along? Have you had any rain lately out your way?" The top-notch salesman will lead the prospect to a discussion about himself and his needs. The farmer doesn't care about how much money the dealer is making or losing but he is very concerned about whether he makes money.

The dealer is responsible for the lack of knowledge and indifference shown by an employee. Train sales people to do a good job of selling. Your employees are your greatest assets.

Too many dealers have too small an investment in personnel. Establish a basis or standard for training your employees. Tell and train them to do a good job of selling. Make sure every employee knows how to tell your customers what your products are, what they're used for, what they'll do and how to use them properly.

persisted with a frown, anxious to get back to his discounts, "where do they come in?"

"Well, Pat said I sorta deserve a reward for listening to him and going way out in that cold field to have the pictures taken, so he was going to give me five bags of fertilizer for my trouble."

"Five bags—just for that!" burst forth Oscar, his sense of frugality outraged. "Some of our customers would have posed for those pictures for—nothing. Especially those that owe us for more than 30 days."

"Well, I don't owe you nothin'," came back Carl Becker, a little miffed by Oscar's attitude. "Oscar, I'm beginnin' to think you are just a little stingy."

"Stingy! You bet I'm stingy. Somebody around here has got to be stingy, or this business would go bankrupt. You can't go around giving merchandise away and come out on top. That's one lesson that Pat McGillicuddy has never learned."

Becker eyed Oscar a little coldly. "And you haven't any lesson to learn, eh?"

"Well, to tell the truth," Oscar said bluntly. "I am doin' all right. I don't owe anybody anything. I've got money in the bank. I won't have to starve in my old age. And I didn't get that way by giving things away all my life, either."

"So that's how the shoe fits, eh?" Becker said. "I've got to go now, Oscar. Tell your men to load on them five bags of fertilizer. You are not renegeing on that deal. And to tell the truth, I was going to order a heavier fertilizer application this year, along with insecticide, all because of what Pat said. Now, I'm not so sure I want to buy here! Tell Pat to call me up."

After the farmer had gotten his five bags of fertilizer and driven away, Oscar came back into the office, his face clouding. "Why can't we just sell fertilizer at a certain price?" he asked. "And for cash? Why do we always have to give something away before we sell, and always advertise and do foolish things? What is this world coming to, anyway? Ach, I am sure I don't know."

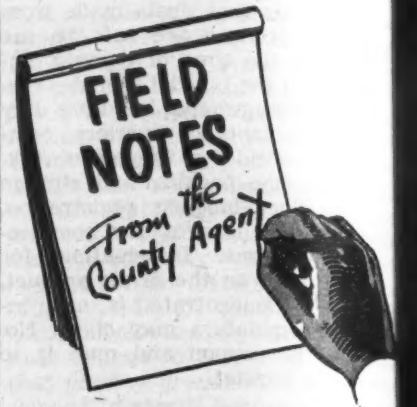
Tillie Mason, the plumpish bookkeeper to whom this tirade seemed to be directed, wisely said nothing—but she thought plenty.

## South Carolina Sales

CLEMSON—South Carolina fertilizer consumption during the last six months of 1955 totaled 119,947 tons, a 9.5% decrease from 132,604 tons in the corresponding period of 1954, according to the state Department of Fertilizer Inspection and Analysis. Included in the 1955 half-year total were 89,311 tons of mixtures and 30,636 tons of materials.

## THE BIG CROP

Wheat produced 51% of North Dakota's total 1955 gross crop value, and nearly 80% of net income from crops after production and harvesting costs were paid.



By RAYMOND ROSSON  
County Agent, Washington County, Tenn.

I get many letters from all over the country. A recent one from the midwest, wanted to know something about the agriculture on our small hilly East Tennessee farms.

Our farms average 46 acres per farm. We have some 120,000 acres in the county, that is counted crop land. Of this 17,900 acres are in row crops, or about 15%. The row crops consist of 11,000 acres of corn (ten years ago we had over 21,000 acres), 2,800 acres of burley tobacco and the balance in vegetables, etc. We have about 5,000 acres in alfalfa, some 10,000 acres in small grains and 74,000 acres in pasture.

We have 31,000 head of cattle—13,000 are milk cows. This gives us 3½ acres of land for every head of cattle.

We have a total of 3,541 farms (1954 census), but there are 870 under 10 acres and 994 under 30 acres.

The value of land and buildings per farm is \$10,460, and the average per acre value is some \$225.

We have 2,492 automobiles, 1,250 motor trucks and 1,673 tractors.

We have 3,483 farms with electricity, 1,138 with television sets, 1,993 with running water in the home and 1,023 with home freezers.

Our tobacco yield is about 1,700 lb. per acre. Normally our corn yield is about 50 bu., while wheat is 22 bu. per acre, and oats produce 40 bu. per acre. Last year we produced 1¼ million dozen eggs.

We rotate our row-crops most every four years, except on the steeper ground and then it is 5 or 6 years.

As you can well see we've practiced a "soil-bank" plan of farming, for two decades. We use 1,200 lb. of something like a 5-10-15 with manure for tobacco . . . 200 to 500 lb. average of a 6-12-12 for our corn . . . and about 300 lb. of the same for wheat and oats as well as 300 to 500 lb. on about half of our pasture land.

All these figures are average. Many of the better farmers will double the amount of fertilizer on their corn, small grain and especially on pasture and alfalfa. However, with only 35 acres of crop land per farm, they don't have enough acres to take any acres out of production.

I was about to forget . . . we have 2,962 owners with only 578 tenants. Our farmers "love" their land . . . they are good managers. We have 20 organized community clubs, 24 home demonstration clubs and 2,100 boys and girls in 4-H clubs.

## FARMS ABSORBED

WASHINGTON — Possibly 50,000 farms were absorbed by the farm enlargement process in 1954, reports the U.S. Department of Agriculture, with about a third of all farms and farm tracts sold being bought for the purpose of farm enlargement. During the same year, about 10,000 new farms were established from parts of existing farms.



## YEAR OF OPPORTUNITY

## Retailers Can Play Key Role in Advising Farmers in 1956

By AL. P. NELSON  
Croplife Special Writer

There are quite a few rural bankers and other farm experts who say that during this period when some farm prices are low, especially hogs, that farmers are going to cut down on just about all their purchases except two.

These two are fertilizer and insecticides and equipment relating to the better use thereof.

Why is this so?

I talked recently with ten managers of auto supply stores in various states as part of a farm market survey. Practically every auto supply store manager, including chain and independent stores, told me that the farmer was in the replacement business at the moment, due to lower farm prices.

In other words the farmer was trying to cut operating expenses by overhauling and getting new parts for his old tractor and other farm machinery. He was buying new tires for his old tractor, too. All this was pointing to a good volume of business for the auto supply man who thrives on parts. When new machinery is sold the auto supply man has to wait until the need for replacement parts develops.

A rural banker told me that the farmer can't stop rebuilding his soil just because prices sag a little. He can cut down on the new equipment he buys, postpone the buying a year or two, but he knows he needs to fertilize well if he is going to have a good crop. Short on expensive farm labor, too, the farmer wants to farm fewer acres and get more crops from them.

Thus it is that in 1956, in the opinion of many farm experts, the farmer is going to turn to help from the fertilizer and farm chemicals dealer more than any other type of tradesman. He is going to ask such a dealer to work with him on soil testing and the spreading of correct amounts of fertilizer for certain crops.

It used to be that the key helper of the farmer was the implement dealer. He could tell the farmer how he could cultivate more acres with modern tractors and other equipment. He did such a good job that he drove the horses off the farm and in numerous instances made it possible for a farmer, his wife and children to operate a large farm without the aid of hired men.

This was a remarkable accomplishment, it is true, but farmers now have a drop in farm prices and income, and so most of them see that they must get along with present farm machinery for the next year or so.

The farm supply dealer can regard 1956 as the year of opportunity for him, if only he takes advantage of it.

Consider the fact that a good hired man gets \$150 a month or more and his board. This means about \$2,000 a year which the farmer must pay him. Now, with efficient farm machinery on hand, and with fertilizer available to farm fewer acres and get larger crops, many a farmer is going to try to save that \$2,000 by working harder and doing all the work himself.

The farmer who operates with fewer hired hands or none at all this year is going to feel that he can spend a little of that \$2,000 cash savings for additional fertilizer and insecticides and perhaps some spraying equipment. Others again will have custom operators apply fertilizer and handle spray jobs.

If the average farmer can reduce the amount of cash he must pay out until his 1956 crops are harvested, then he feels he can weather the storm which seems ahead for him. He can well figure that for one year or more, he can get along with less cash hired help, or none at all, and then when prices move up again, hire a qualified worker again, when he can afford it.

Thus at least in the fertilizer and farm chemicals field, the farmer likely will be a more active customer. The amount of merchandise which the dealer sells him is going to depend a great deal upon the educational work which the dealer does, to show the farmer how he can use fertilizer and farm chemicals as effective, inexpensive tools in his battle to wrest some profit out of a declining price situation.

Then, too, excellent displays, good advertising, test plot information and many other sales aids which will bring the sales story to the attention of farmers, will have an important bearing on how each dealer fares in the months ahead. For the alert dealer the months ahead will be filled with sales opportunities. This would not be the case if farmers could defer the buying and the using of fertilizer, farm chemicals and related equipment, like they can tractors and similar equipment.

On the other hand, along with the increased sales opportunities, the dealer is going to have to watch his credit handling of accounts. Farmers are going to be pressed for cash in comparison to a year or two ago. They may be slower in paying their bills. The dealer needs to take cognizance of this factor and plan accordingly.

The fertilizer and farm chemicals dealer should also realize that 1956 will be a year when he should make every effort to tap the garden supply market.

Home owners in general, those who work in factories, offices, industries and elsewhere have high incomes and apparently plenty of spendable income. These people more than ever before are spending money for fertilizers for trees, shrubs, lawns and gardens. They also buy garden tractors, power mowers, hand mowers, and garden and lawn tools on a large scale.

Because the total number of homeowners buying these items is large the total volume from them is huge, and is rising each year. Many a fertilizer dealer will do well to explore the possibilities of selling more to such customers.

Check the stock you already have and see if it is complete and varied enough to take care of many of the needs of that field. Remember, too, that much of this business may be small, but it will be cash in most instances. Sales will average from \$1 to \$15 to a customer, and when larger items are sold they may run to \$200.

The garden supply market can be your ace in the hole in 1956.

## ACCEPTED INTO CROP GROUP

LITTLE ROCK—The International Crop Improvement Assn. has accepted Arkansas into membership of this organization of Canadian and United States seed certification agencies. Robert W. Anderson, head of the State Plant Board's Division of Seed Certification and Inspection, who attended the fall meeting of the organization at Winter Haven, Fla., will represent Arkansas at the next annual meeting in Salt Lake City next fall.

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IT'S PHILLIPS 66  
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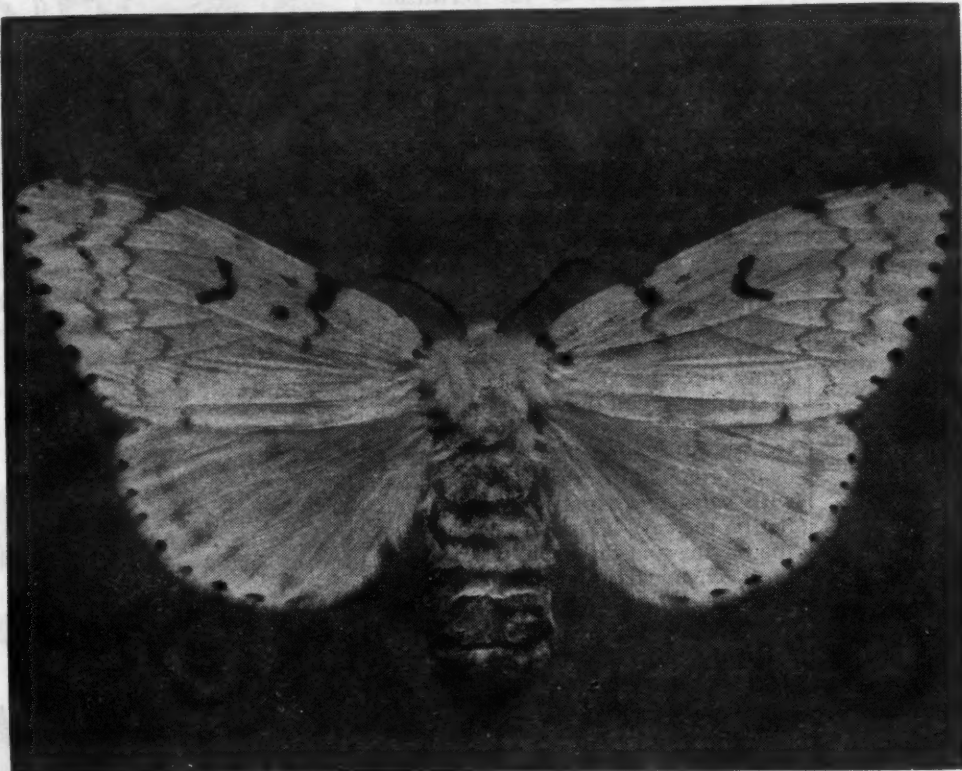
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## BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

### Gypsy Moth



#### How to Identify

Gypsy moth larvae usually appear about the first of May, after having passed the winter in the egg stage. They are restricted, geographically, to the New England states and eastern New York State. By the middle of June, these larvae are about two inches in length and these young caterpillars eat voraciously. They have several pairs of blue and red dots on their backs. Late in June, or early in July, they become more mature and begin to seek shady places (usually on trees or rocks) in which to pupate and transform into moths. Upon emergence late in July, the male moths are brown with strong wings for long flight, but the females are lighter in color and have heavy bodies which prevent them from making sustained flights as the males are able to do.

#### Habits of the Gypsy Moth

As mentioned above, male moths are able to fly about, which they do mostly in the daytime. Since the female moth cannot fly, other than to flutter around near the ground, she lays her eggs close to the place where she, herself, became a moth. Eggs are laid in clusters of 400 or more, which are covered with brownish hairs. When laid in freight cars, trucks or other objects which are shipped or moved to new locations, the eggs are thus introduced into areas where the pest has not been known before.

#### Damage Done by Gypsy Moth

This insect has the dubious honor of being the foremost destroyer of shade trees, deciduous and evergreen. The caterpillars, or larvae, of the gypsy moth eat the leaves and the defoliation retards growth and often kills the trees. During May and June each year in New England, valuable orchard trees and many others are stripped of their leaves. Garden plants are also attacked and altogether, several hundreds of species of plants are regarded as susceptible to the bug's appetite.

#### Control of Gypsy Moth

Since this pest attacks largely in forested areas over a wide territory, the most satisfactory method of control has been via airplane application of pesticidal chemicals. This may be done shortly before or after the eggs hatch. Ground sprayers are effective along highways or in residential sections. Knapsack sprayers may be used for treating low growth along stone walls and fences. Egg masses may be killed in the winter and in the spring, when larvae are crawling, bands of chemicals around the trunks prevent the larvae from climbing up. Use of DDT with fuel oil or kerosene has proved effective when applied from plane. Kinds of pesticides and rates of application, as well as timing of application, vary in different areas of the United States.

Picture of gypsy moth furnished Croplife through courtesy of United States Department of Agriculture

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

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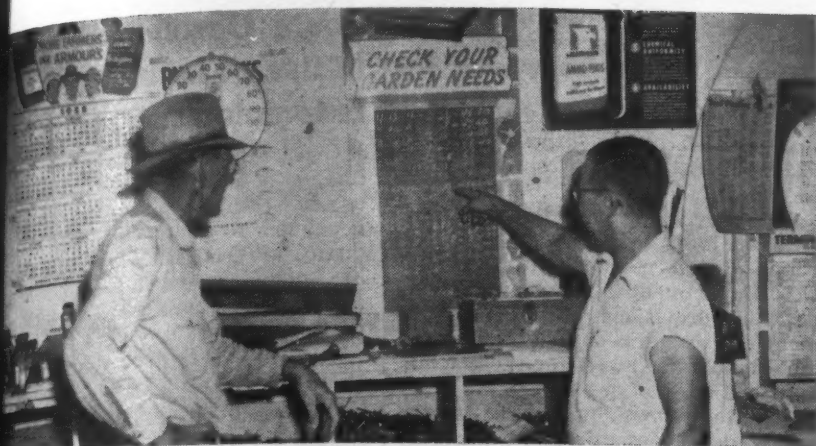
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**TEXAS DEALER**—Jean P. Marrou, one of the owners of Marrou Brothers, Gonzales, Texas, is shown above using a fertilizer chart to discuss a farmer's needs. The chart lists the main fertilizer sellers with price. This firm builds business by making sure that the customer gets good results with his first purchase.

## First Sale Is Key to Future Business, Says Texas Retailer

By RUEL McDANIEL  
Croplife Special Writer

It is impossible to over-stress the importance of the first 100 lb. of fertilizer a new customer buys, according to Jean P. Marrou, one of the owners of Marrou Brothers, Gonzales, Texas. It is vitally important for what results, or lack of results, he sees from this first 100 lb. determines to a large extent what sort of customer he is going to be in the future.

"We consider that the first 100 lb. we sell a customer is our most profitable sale," he stresses, "because we make it a point of knowing what he expects to accomplish with the fertilizer and then see that he gets the fertilizer he needs to accomplish the desired result."

Gonzales, called the "Lexington of Texas Independence" because the first shot of the Texas Revolution against Mexico was fired here, is an old agricultural area, and yet fertilizer use is comparatively new and farmers need to know what the various fertilizers will do for their soils. Marrou salesmen know—and see that their customers know.

The concern sells about 1,000 tons of fertilizer yearly, to vegetable and watermelon growers, grain and cotton farmers.

"We find that some farmers want to use more fertilizer on their soil than it needs," Mr. Marrou points out, "and sometimes our hardest selling job is to convince them that they should use less fertilizer than they had in mind using."

"We're in the business of selling fertilizer, but we expect to sell next year and several years hence, the same as this year, and the only way to be sure of future business is to see that today's customers get the most for their fertilizer dollars."

The company works closely with customers toward a long-time soil-building program by the use of fertilizers, and it sets up fertilizer schedules for them over a period of years, varying the ingredients and ratios to fit the building program. Fortunately there is little variation in the soils of the county and as a consequence Mr. Marrou and his partners, when they know the location of a customer's land, can sensibly set up a program for him. They know the soils of the county that well.

Another factor that has built fertilizer business and enables the management to recommend the proper program for each customer is the policy of carrying a large stock. The company stocks 24 dif-

ferent analyses of fertilizers, and all in sufficient quantity to fill any normal order.

By working closely with the larger users, the company is able to reduce warehousing and eliminate handling and delivery expense by pooling several larger orders and having the customers unload directly from the car and do their own hauling. This is possible by notifying customers in advance when to expect their fertilizers, and some of them time their distribution with the arrival of the car so that they do not have to store it on their own premises.

"Adequate stocks and analyses are important," Mr. Marrou stresses, "because they make it unnecessary to substitute something else for what a farmer really needs. In that way, he gets more for his money and he remains a good customer."

### Arkansas Youth Gets 2.86 Bale Cotton Yield

**HUGHES, ARK.**—Ten-year-old Douglas Trainor, who lives near Hughes, is believed to have produced the top per-acre-average yield of cotton in St. Francis County.

At least, his 2.86 bales per acre on a 20-acre plot is the highest yield recorded in agriculture offices of the county.

Douglas is the son of Mr. and Mrs. Grady Trainor, who live in the rich delta section of Arkansas. This is the first year in Four-H club work for the youth.

The 20 acres chosen was the finest land—sandy loam—on the plantation, and half of it was new ground. Subsoil plowing, beginning in December, extra heavy applications of fertilizer, and five poisonings by plane were some of the practices Douglas followed. He had the advice of his father and of his 4-H Club extension leader, John Stipes.

He used 3,582 lb. of complete fertilizer and 3,000 lb. of lime, as well as ammonia nitrate, liquid anhydrous ammonia, phosphate and potash.

Chopping was begun in May and continued through August. Most of the crop was gathered by hand. Douglas figured he put in 111 hours of work on the crop.

### TOBACCO PROGRAM

**LEXINGTON, KY.**—One of the sections of Farm and Home Week at the University of Kentucky will be devoted to the growing and marketing of tobacco. Held Feb. 3, subjects to be discussed include control of insects and diseases, nicotine tests, foreign markets and over-all problems of growing leaf.



## FARM SERVICE DATA

Extension Station Reports

The year 1955 will probably long be remembered as one of the greatest ever for crops production in Mississippi.

It was a great mass demonstration of what can result from the blessing of highly favorable weather, coupled with the general application of modern agricultural technology. Compared to 1948, the other most recent year of quite favorable weather during the main growing season, it indicates great progress in the wide application of agricultural research.

Some "end of the year" observations along this line have been made by specialists of the Agricultural Extension Service.

"The long-range prospects for agriculture are encouraging, despite price decline, continued surpluses of some products, and low yields in drouth areas," points out J. V. Pace, Extension economist.

A highlight of 1955 is Mississippi's all-time record cotton yield of 564 lb. of lint per acre. This brings to a climax the cotton improvement program that farmers and agricultural leaders have taken several years to build.

Much of this cotton crop was produced more efficiently than ever, points out T. M. Waller, Extension cotton specialist. The two million bales produced this year is the fourth largest crop on record. Compared to it is the one and seven-tenths million bales average for the 1944-1953 period. Yields of two bales or more per acre for entire farms were common in 1955 over much of the state.

A large percentage of Mississippi farmers used two to three times more fertilizer on cotton in 1955 than they did in 1948; when the highest prior state cotton average of 441 lb. of lint per acre was made, Mr. Waller points out. This fertilizer was placed better in 1955 through the use of improved equipment and "know how."

The general emphasis on seed treatment helped to assure better stands. The proper use and timely application of the newer organic insecticides have become general.

An all-time high state corn yield of 30 bushels per acre was also made by Mississippi farmers in 1955.

This is still not a record quantity of corn, the all-time high for this being about 51 million bushels. But the over 46 and a half million bushels of 1955 is a gain of about 19 million bushels over 1954.

Some farmers averaged two and even three or more times the 30-bushel state average on their entire corn crops in 1955. They did this by selecting good corn land, planting early, planting an adapted hybrid, using enough fertilizer, proper spacing and weed control.

The latest recommendations for the use of commercial fertilizer for production of all major crops and for major soils in Louisiana are included in an Extension publication, "Fertilizer for Louisiana Crops," issued by the Louisiana State University Agricultural Extension Service.

Reporting on crop improvement in Fulton County, Ky., John B. Watts, the county agent, noted that farmers

used 7,400 tons of limestone, 1,800 tons of 20% phosphate, 3,128 tons of commercial fertilizer and treated 3,184 acres with nitrate fertilizers. Waynes Austin was the county's champion corn grower, producing an average of 127 bu. an acre on 14 acres.

Plenty of available nitrogen during the early spring is essential for profitable small grain production, according to G. R. Epperson, associate agronomist at Virginia Polytechnic Institute. He said that use of nitrogen as a topdressing is particularly important following high yields of crops during the previous good growing season, when large amounts of plant food nutrients were used.

Tests have shown that early applications are most profitable. Mr. Epperson suggested topdressing before March 1 in the coastal plain and southern Piedmont, and by March 15 in the rest of the state. Nitrogen should be applied before there is much growth of the crop.

Nitrogen topdressing is doubly important on small grains that will be used for grazing, silage and hay. Small grains that were heavily grazed in the fall and early winter, and which will be grazed in the spring, will need more nitrogen than those used for grain only or those grazed lightly, Mr. Epperson said.

Alabama farmers will find fertilizer one of their smartest buys this year, according to P. O. Davis, Alabama Polytechnic Institute extension director. He said recently that most farmers in the state can profit this year by upping 1955 average fertilizer applications 100% for pastures, 40% for corn, 30% for cotton and 20% for peanuts.

The use of irrigation in 1955 increased in spite of wet weather throughout Louisiana. Data supplied by county agents of 27 North Louisiana parishes show that more than 466 farms acquired and used irrigation equipment of one kind or other in 1955.

Crops irrigated included cotton, corn, soybeans, sweet potatoes, pasture, alfalfa, oats and peaches. In the 27 North Louisiana parishes, more than 39,000 acres were reported to have been irrigated in 1955.

Vaughn Porter, Elliott County, Ky., 4-H boy, grew 186.9 bu. of corn on an acre in 1955. He used bottom land that had been in alfalfa for three years.

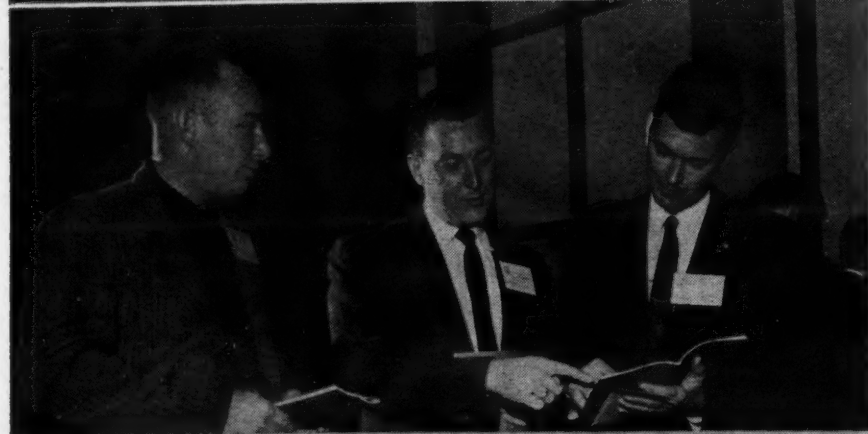
Then he followed the recommendations of Edgar Rice, county agent, as follows: He had the soil tested. Then he applied 10 tons of manure and 500 lb. of 20% phosphate, before the land was turned in March to a depth of 10 inches. The land was disked four times before planting.

On May 22 he mixed 500 lb. of 10-10-10 with the soil. He added 500 lb. more when the corn was planted. Ky 103 hybrid corn was grown. It was thinned to about 10 inches in the row which meant a stalk population of 18,392 on the acre.



# Better Selling

Richer Sales Fields for Dealers



**PESTICIDE SCHOOL "STUDENTS"**—The 1956 pesticide school held Jan. 10-11 at Raleigh, N.C., attracted many from a broad area. In top photo, left to right, are W. G. Westmoreland, extension agronomy specialist for N.C. State College; A. S. Crafts, professor of botany, University of California; W. A. Harvey, extension specialist in weed control for the University of California, and Dr. R. L. Lovvorn, director of instruction, School of Agriculture, N.C. State College.

In the center photo are A. E. Leavitt, Apex Chemical Co., Apex, N.C.; W. J. Gehweiler, R. T. Vanderbilt Co., Guttenburg, N.J., and Phil Arey, U.S. Rubber Co., Orlando, Fla.

At the bottom are J. Myron Maxwell, Cary, N.C.; Dr. D. E. Ellis, professor of plant pathology for North Carolina State College, and C. F. Smith, department of entomology at the college.

## NORTH CAROLINA MEETING

(Continued from page 9)

lack of effective chemical treatments. Seed should be soaked in water for a given time and then confined in an airtight container. Ordinary dust treatment should be continued also, he said.

The latest research results on blue mold, wildfire, and anthracnose of tobacco were described by F. A. Todd, extension plant pathologist. He reported that fungicides containing ferbam, zineb, and maneb have given excellent control of both anthracnose and blue mold in flue-cured areas. He added that, although antibiotics such as streptomycin show promise in controlling blue mold, so far they do not control anthracnose. However, antibiotics, especially streptomycin sulfate formulations, show excellent control in burley plant beds as a pre-

ventive and eradicator of wildfire, he said.

J. C. Ferguson, extension agricultural engineering department, covered the topic of application equipment. Briefly, Mr. Ferguson stated that best results cannot be achieved unless proper equipment is selected, properly calibrated, and adjusted.

Reviewing the plant parasitic nematode situation in North Carolina was Dr. J. N. Sasser of nematology research, who pointed out the various methods of approach in control, including soil fumigation.

Reports on soil fumigation with nematocides featured L. W. Nielsen, of research, potato and sweet potato diseases; J. C. Wells, extension plant

pathologist; C. N. Clayton, of research on fruit diseases; and C. J. Nusbaum, research on tobacco disease.

Insecticides were covered in the final session of the school with H. Eldon Scott, extension entomologist, presiding.

Mr. Coyne opened the program with an interpretation of the Miller Bill and the responsibilities of the U.S. Department of Agriculture under the provisions of this amendment. He reminded that tolerances must be obtained only for those foods and feed uses of pesticide chemicals which are economic poison uses under the Federal Insecticide, Fungicide, and Rodenticide Act.

"In reality," Mr. Coyne continued, "the Act sets up a quick method for establishing tolerances or exemptions for residues or agricultural chemicals requiring registration under the Federal Insecticide, Fungicide, and Rodenticide Act, when such residues result from use of these chemicals on raw agricultural commodities."

Reporting on research on cotton insect, forage crop pest, insurance methods, and vegetable pest controls were W. J. Mistic, J. R. Doger, W. M. Kulash, and C. H. Brett, research specialists in each field, respectively.

Using the 1956 North Carolina Pesticide Manual, compiled for the school by the college staff, Dr. George D. Jones, extension entomologist, pointed out the major changes in control recommendations for 1956.

Dr. Jones reported no major changes in apple and peach recommendations, but the major change in tobacco insect control deals with wireworm control in newly set tobacco plants. When using endrin on tobacco, Dr. Jones warned that people should not work in the fields immediately after or during treatment.

In discussing cotton insects, Dr. Jones revealed that current data shows that, unless the southeastern quarter of the state gets several days of below 15 degrees F. temperature, the boll weevil may be out in large numbers from early June in at least half of North Carolina's counties.

Continuing, Dr. Jones stated that mixtures of malathion-methoxychlor appear to play an important part in vegetable insect control, and diazinon has been approved for use in dairy barns for control of livestock insects.

The entire group participated in a question-and-answer session before adjournment on Jan. 11.

Copies of the 1956 N.C. Pesticide Manual are available at a cost of \$1 each or 75¢ for four or more copies, it was announced at the meeting. (Orders should be sent to the Division of College Extension, Box 5125, Raleigh, N.C.)

## Oklahoma Meeting

STILLWATER, OKLA. — A meeting of the Oklahoma Plant Food Educational Society, Inc., has been scheduled for Feb. 15-16 in connection with the crops and soils conference to be held at Oklahoma A&M College, Stillwater.

## FARM RESEARCH WORKSHOP

WASHINGTON — A two-day research workshop to study farm business problems will be held at Clemson State College, Clemson, S.C. March 8-9, J. K. Stern, president of the American Institute of Cooperation announced recently. "The Institute, which is the educational and research agency for farmer cooperatives, will jointly sponsor the workshop with the Farmer Cooperative Service of the U.S. Department of Agriculture," Mr. Stern said.

## South Carolina Leads In Use of Mixtures, Entomologist Reports

COLUMBIA, S.C. — South Carolina, a pioneer in making extensive use of fertilizer-insecticide mixtures continues to be the leading state in quantities used, according to William J. Goodwin, associate entomologist and associate professor of entomology, Clemson College, S.C.

He told a state convention of Young Farmers of America that 30,000 tons of these mixtures was applied to 1,108,000 acres in the state in 1954 to control the following crop pests:

Corn: 1,000,000 acres to control sand wireworms, corn rootworms and seed corn maggots.

Irish Potatoes: More than 5,000 acres to control wireworms.

Pastures: 1,200 acres to control white grubs.

Sweet potatoes: 1,000 acres to control wireworms and flea beetles.

Snap beans: 1,000 acres to control seed corn maggot.

South Carolina farmers also applied some mixtures to cotton to control sand wireworms, to truck crops to control the mole cricket, and to lawns to control white grubs.

The corn crop receives more than all other crops combined in South Carolina and over one-half of all fertilizer-insecticide mixtures in the United States, Mr. Goodwin said, pointing out that in 1954, Iowa farmers applied mixtures to 362,500 acres of corn.

"The cost of the mixture varies with the insecticide used and the firm formulating it," he said, noting that the price of fertilizer is increased approximately \$25 per ton in the South Atlantic Area when eight pounds of aldrin is added to control the southern corn rootworm in peanuts. Applying 500 lb. per acre as is recommended fixes the cost of aldrin in the mixture at approximately \$6.25. "This is a very cheap control of this pest," he commented.

"Some of the insecticides used in the mixtures, besides aldrin, are chlordane, DDT, dieldrin, heptachlor and toxaphene. These mixtures are recommended in 26 states and would probably be recommended in more but for lack of scientific data.

"The main problems encountered are those of labeling, administration of fertilizer laws, and how to formulate a mixture to suit each crop and farm."

He said that while powdered insecticides have been preferred in the mixtures, the use of granular insecticides is increasing rapidly. These materials can be applied by conventional dusters or airplanes without the loss of insecticide that occurs when cropland is dusted or sprayed.

## Extension Agent Joins Arkansas Farmers Assn.

LITTLE ROCK, ARK. — J. M. Thomason, district extension agent for Northeastern Arkansas since 1942, has been appointed director of soil building services and organization for the Arkansas Farmers Association.

G. M. Measeles, AFA general manager, said Mr. Thomason will work with the University of Arkansas Soil Testing Service, county agents and vocational agriculture instructors promoting the use and application of fertilizer on farms.

Mr. Thomason, a member of the Arkansas Agricultural Extension Service staff 33 years, served as county agent in Ashley, Union and St. Francis counties before assuming his present duties.





## The right answer to one of your many problems...

Farming today is a complicated business. It requires practical knowledge of many things—soils, crops, seed, livestock, machinery, insect control, rotation, conservation, diversification, business management, salesmanship—to mention only a few. You have to have the right answers to many problems to be a good farmer.

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# Use of Farm Know-How Could Produce Higher Net From Less Output, Colorado Group Told

FT. COLLINS, COLO.—The year ahead could be our biggest crop and livestock year on record. That is the opinion of Dr. W. H. Garman, chief of agronomic relations for the National Plant Food Institute, Washington, D.C., who spoke before the fourth annual fertilizer conference at Colorado A and M recently. The meeting was attended by nearly 150 persons connected with the sale, manufacture and use of farm fertilizers.

Dr. Garman noted that leading economists predict our national economy as a whole will likely remain at or near the current all-time high level for at least two or three years. Regarding crop yields, he believes 1956 prospects are "favorable."

What about farm income for 1956? Dr. Garman said most experts take more or less of a pessimistic view on this point. They see farm production costs rising just a little. Because of this, they find little hope for improvement in the amount of money that will remain in farmers' pockets.

"This means," Dr. Garman said, "if our farmers are to live as well as they are accustomed to living, they will have to produce ever more and more efficiently."

Dr. Garman said farmers are faced with the task of maintaining farm income while reducing acreages in principal crops. To do this fewer acres will be farmed, but will have to return at least as much income as the farmer now realizes.

One possible solution, he said, lies in cutting on-the-farm costs of each unit of a product produced. By doing this farmers could realize a greater net income, even though gross income might decline.

He concluded, "by farming as well as we know how, the total units produced could be reduced to the point where we would utilize our crop surpluses rather than add to them, and, at the same time, farmers could be realizing more income than they are now receiving."

Colorado A and M scientists and USDA scientists working in Colorado



AT COLORADO CONFERENCE—W. H. Garman, right, chief, agronomic relations, National Plant Food Institute, addressed more than 75 persons who attended the annual banquet for the fourth Colorado A and M fertilizer conference. W. E. Morgan, president of Colorado A and M is seated on the left. Mr. Garman's subject was "The Changing Farm Picture." He pointed out that through use of efficient farming methods, including fertilization, it is well within the realm of possibility for farmers to realize a greater annual net profit and at the same time produce fewer units of major crops.

released latest results of their fertilizer tests at the meeting.

In fertilizer-crop rotation studies in the Upper Colorado River Basin near Grand Junction, scientists have obtained large boosts in crop yields on sub-marginal land by paying careful attention to fertilization and proper irrigation. Just three years ago they lowered the water table by furnishing a adequate drainage and leveled the land for more efficient irrigation. During the past year they grew a 6-ton per acre alfalfa crop, a 129-bu. per acre corn crop and a beet crop that yielded as high as 25 tons per acre.

Some of the better rates of fertilization for the crops have been: for beets—nitrogen and phosphate at 100 lb. N and 75 lb.  $P_2O_5$  per acre; for corn—75 lb. or more of N per acre; and for alfalfa—300 lb. of  $P_2O_5$  per acre.

Scientists reported that studies are under way to test effects of spacing of corn plants and nitrogen fertilization on yield and forage. Spacings of three to 14 inches are being studied.

In the San Luis Valley, spacing tests with potatoes showed that 10-inch spacing of plants gave the best increase in yields, but 14-inch spacing produced a slightly higher percentage of U.S. No. 1 potatoes. The potatoes yielded best when fertilized with both nitrogen and phosphate.

Researchers have boosted yield and quality of mountain meadow hay in every instance when they have applied nitrogen fertilizer. At some locations in the state, combinations of nitrogen and phosphorus gave better results on meadows than nitrogen alone.

By applying 200 lb. of nitrogen per acre to meadows in northwestern Colorado in 1954, they doubled the beef-carrying capacity.

Colorado A and M tests in Morgan County on field beans obtained for the first time an increase in yields as a result of phosphate fertilization. Soil on which the beans were grown was very low in available phosphate with soil tests showing only 14 lb. of  $P_2O_5$  available per acre in the upper six inches of soil.

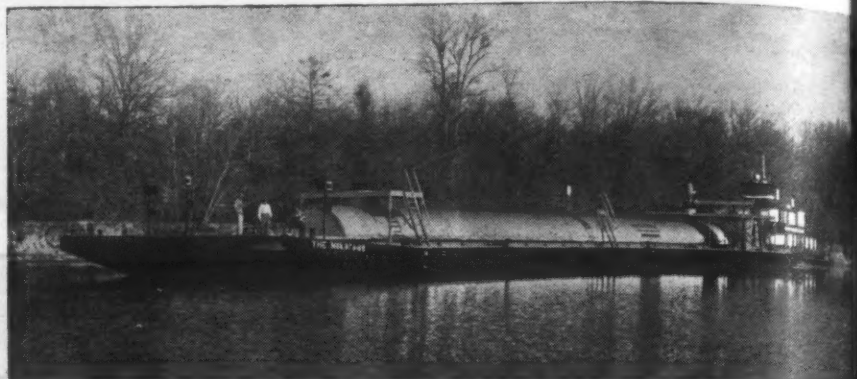
A and M scientists now have specific recommendations for restoring farmland to good production after topsoil has been removed by leveling. After preparing a good seed bed they have obtained practically normal yields the first or second year after leveling by fertilizing heavily with nitrogen and phosphate.

If the first crop after leveling is to be beets, alfalfa or clover the researchers recommend plowing under 200 lb. of  $P_2O_5$  prior to seeding. If the first crop is to be corn or small grain, they suggest cutting the application down to 100 lb. Prior to the second year of cropping with beets, another 100 lb. of  $P_2O_5$  should be applied. After the second year, 80 to 100 lb. of  $P_2O_5$  per acre should be applied each year.

Nitrogen fertilizer is also necessary to restore the leveled land. If the first crop is to be alfalfa seeded with small grain, the scientists recommend applying 40 to 50 lb. of N. If the first crop is to be small grains alone, 60 to 75 lb. of N is needed; if sugar beets or corn, 100 to 150 lb. of N should be applied.

## LOAN APPROVED

OLATHE, KANSAS — Deep Root Fertilizers, Inc., is included in a recent listing of loan approvals announced by the Small Business Administration, Washington. The amount of the loan was for \$122,500.



NEW SULPHUR BARGE—Lion Oil Co.'s new liquid sulphur barge, the Nokorode, is pictured in midstream as it approaches the dock at Champagnolle Landing on the Ouachita River near El Dorado, Ark. The loaded barge, when pictured, was completing its first trip from the gulf coast of Louisiana. The 240 foot by 45 foot sulphur barge is equipped with an insulated, steam-heated tank which has a capacity for 1,000 long tons of liquid sulphur. The sulphur transported by the barge is ultimately trucked from the river to the company's El Dorado chemical plant and used in the manufacture of Lion Sulphate of Ammonia fertilizer. Presently, the plant is using about 100 tons of sulphur a day. Lion's new docking facilities at Champagnolle Landing consist of an unloading dock and dolphins, two 1,800-ton capacity steam-heated storage tanks, a steam boiler, a truck-loading rack and the necessary pumps and pipelines. The barge was built by Ingalls Iron Works Co. at Decatur, Ala.

## Pennsylvania Fertilizer, Lime Conference Set

UNIVERSITY PARK, PA. — The annual Pennsylvania Fertilizer and Lime Salesmen's Conference will be held at Nittany Lion Inn at Pennsylvania State University Jan. 30-Feb. 1. The program includes a wide range of topics on use of fertilizer and lime.

The status of the proposed revision of the Pennsylvania Fertilizer Law will be explained by L. H. Bull, deputy secretary of agriculture of Pennsylvania, and by A. A. Schultz, Reading Bone Fertilizer Co.

Topics of interest to the fertilizer and pesticide industry also are scheduled during the annual fieldmen's conference of the Pennsylvania Cannery Assn., to be held at the university Feb. 1-3.

## Chipman Chemicals, Ltd. To Establish Central Offices in Hamilton, Ont.

MONTREAL—A decision to establish its central administrative offices in Hamilton, Ont., has been announced by Chipman Chemicals, Ltd. The firm is the result of a recent merger by Chipman with the pesticide operations of Canadian Industries, Ltd.

J. H. D. Ross, general manager of the reorganized pesticides firm, said that the new accommodations, to be located at 519 Parkdale Ave., will house the headquarters of the company's central sales, development, technical service, railway and production, as well as the eastern Canadian sales office. Some 40 personnel will be employed there to begin with. The new offices will open Feb. 1.

Mr. Ross also announced the appointment of J. G. Hastings as general and eastern sales manager, L. M. Godfrey as development and technical service manager, W. P. Dean as railway service and production manager and W. F. Crutchlow as controller.

Mr. Hastings, Mr. Godfrey and Mr. Crutchlow were previously employed with the CIL agricultural chemicals division, Montreal. Mr. Dean has been with Chipman Chemicals Ltd., Winnipeg.

Hamilton was chosen as the headquarters of the company because it is considered the geographic center of the largest pesticides consuming market in Canada. Two district sales offices have been established—one in Winnipeg to serve western Canada and the other in Hamilton to serve eastern Canada. Western sales manager is S. G. Pugh, formerly with Chipman Chemicals Ltd., Winnipeg. The assistant eastern sales manager under Mr. Hastings is D. C. Mumby, formerly with CIL.

## Corn Earworm Heads List of Virginia's Most Damaging Insects

BLACKSBURG, VA.—A list of the "10 most damaging insects in Virginia" has been compiled by entomologists at Virginia Polytechnic Institute for 1955.

Arthur P. Morris, associate entomologist in charge of the insect survey program, says the list is headed by the corn earworm, which for the second time since the summer of 1947 severely damaged several crops. The outbreak was particularly severe on peanuts late in the summer. Damage from the earworm became evident near the middle of June on alfalfa and corn, and continued on various crops until late September.

Other insects on the list are the housefly, rice weevil, angoumois grain moth, codling moth, alfalfa weevil, plum curculio, Mexican bean beetle, spotted cucumber beetle and the Japanese beetle.

Aphids and spider mite groupings could have been put in the first 10 on an over-all basis, but there were several different species of each involved, so they were omitted from the list.

Codling moth damage to apple orchards in Virginia was probably lighter this past year than during the preceding two growing seasons, except in the southern areas where spray schedules were limited because of lack of fruit on the trees. With only a few exceptions, plum curculio did little damage to apples.

House flies were first recorded as "active" around eating establishments, food markets and a few homes in some areas in early March. After the weather became warm, infestations built up quickly around garbage dumps, cattle and pig pens, and in unsanitary situations. Controls were generally applied.

Japanese beetles damage a wide variety of plants every year, and the 1955 infestations were generally heavier than in 1954.

Angoumois grain moths and rice weevils are major insect pests of stored grain in Virginia. Every year, Mr. Morris said, they cause a tremendous loss in stored grain, whether on the farm or in elevators.

Damage from the Mexican bean beetle was severe in gardens all over the state where proper control measures were not used. They were first reported the first of May in Princess Anne, and they were present in varying numbers until the cold weather in November.

## FIRM CHARTERED

BATON ROUGE, LA. — Natchitoches Seed Store, Inc., Natchitoches, has been granted a charter. The firm will deal in fertilizers.





## WORLD REPORT

By GEORGE E. SWARBRECK  
CROPLIFE Canadian and Overseas Editor

### Plants Completed

The new ammonia synthesis plant Fertilizers and Chemicals Co., Ltd., Haifa, Israel, has reached the production stage. It will convert nitrogen from the air into ammonium. Aiding the firm is a group of U.S. experts who recently arrived to be in at the start-up.

A new sulfur plant, with a yearly capacity of 20,000 metric tons, has begun operations at Hinojeda, Santander, Spain. The sulfur is obtained by processing sulfide ores from the adjacent Reocin mines. Spain imported 8,330 metric tons of sulfur in 1954, but the new plant is expected to cut the need for purchases overseas.

But from Northern Ireland comes news of a plant that won't be built. Plans had been discussed for the erection of a fertilizer factory at Strabane. The Northern Ireland Development Council has recommended against the site.

The Irish use a lot of mixed fertilizers; the quantities of some are very low in relation to production units of economic size. Secondly, most of the basic materials required, including phosphate, would have to be imported. Moreover, the economic distribution of the finished products would present difficulties.

If a new factory is decided upon, it will have to go at a deep water port, the council states.

### Belgian Congo Need

The Comité de Gerance de la Caisse Reserve Cotonnière, a government-sponsored cotton-stabilizing committee in Leopoldville, Belgian Congo, is the market for supplies of insecticide.

The committee wants 100 tons of powdered insecticide containing 10% toxaphene, or 100 tons containing 15% toxaphene, and 337 tons of powdered insecticide containing 10% toxaphene and 5% DDT.

The deadline for tenders is Feb. 15 and bids must be addressed to the organization at 10 Avenue Prince de Saxe, B.P.3058, Leopoldville. The approximate value of the purchase is \$10,000, according to the Belgian authority.

### Greek Imports

Imports of fertilizers into Greece through the private trade are expected to resume this year. Hitherto, the government has been responsible for foreign purchases.

Chemical fertilizers and certain pesticides, including copper sulfate, have been exempted from customs duties until the end of 1956. This exemption is an extension of the annual relief from duty granted during the earlier years of state procurement. The private trade, it is expected, will benefit from the exemptions now announced.

The exemptions are made to aid farmers keep down their costs of production.

### Pyrites Freights

The threat of a rise in the cost of shipping pyrites, along with the decreasing availability of low-cost elemental sulfur, is expected to accelerate the trend towards the increasing use of indigenous sulfur resources, whether in the form of reduced sulfur or of anhydrite, in the

table unless it can be balanced by a substantial reduction in the f.o.b. price of pyrites.

The problem is discussed in a bulletin published by the British Sulphur Corp. The rise in freight costs is a direct result of the cessation of coal exports from the U.K. and the growth in the movement of coal from the U.S. across the Atlantic. This has the dual effect of depriving shipowners of profitable outward voyages with coal to the western Mediterranean, and inward voyages with pyrites. They have diverted their

ships to the better-paying North Atlantic trade.

Almost all of the vessels left in the pyrites trade, the bulletin states, are vessels built before 1920 and are on the point of having to be replaced. Replacement by specialized ore carriers would result in a higher level of freight.

### Japanese Trade

The Japanese firms are appearing prominently in the lists of suppliers of fertilizers to foreign countries in the east, either for direct sales or for U.S.-financed deals. The growth of the industry in Japan has been phenomenal.

Though affected by wartime difficulties, the ammonium sulfate industry has a potential production capacity of 3,040,000 tons a year, most of it built up in the last nine years.

Even more expansion is planned and production already is topping 2.5 million tons of ammonia in

CROPLIFE, January 30, 1956—19

terms of ammonium sulfate. The increases are in the region of 75% over the prewar peak.

Immediately after the war, the Japanese had to rely on supplies from the U.S. Now exports are running at more than 500,000 tons a year. In September, 1954, the Ammonium Sulfate Export Co. was established to handle all exports.

Trade sources say that an American firm, Chemical Construction Corp. of New York, is to design a nitrogen fertilizer installation for Nihon Gas Kagaku Kogyo K.K. of Tokyo. It will have an ammonia plant with a capacity of 10 tons a day, and a plant for urea with an expected output of 90 tons a day.

### EXTENSION AGENT DIES

AMES, IOWA—Carl R. Smith, district extension agent with the Iowa Agricultural Extension Service, died recently. He had 15 Southwest Iowa counties under his jurisdiction.

Now available . . . everywhere!

# STAUFFER VAPAM<sup>®</sup> 4-S

A NEW TEMPORARY  
SOIL STERILANT  
**KILLS**

- WEEDS
- WEED SEEDS
- NEMATODES
- SOIL INSECTS
- SOIL FUNGI

One easy application of Stauffer Vapam 4-S and the soil is free of virtually all subsoil pests and diseases. No special equipment or ground covers are necessary, for water-soluble Vapam 4-S is simply watered into the soil. In two or three weeks it dissipates, and you plant! The remarkable efficiency and application ease of Vapam 4-S has opened markets everywhere for this new development of Stauffer Research.

Nurserymen are using Stauffer Vapam 4-S to produce weed-free and disease-free seed beds for vegetables and ornamentals. Growers of ornamentals are using pre-plant field treatment for ornamentals and producing spectacular yield and quality where soil disease has been a problem. Turf gardeners find that renovating infested turf without rebuilding — or treating new lawn seed beds — is easy, for with Stauffer Vapam 4-S acres can be treated in a day!

Stauffer Vapam 4-S (a 4-pound-per-gallon water solution of Vapam) is available in 1, 5, 30, and 55-gallon containers. Talk with your local Stauffer office for details.



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## PACIFIC NORTHWEST MEETING

(Continued from page 1)

sized that while the results were very encouraging, several years of trials were needed.

Another session of the Agricultural Chemical Industry conference heard Dr. Paul O. Ritcher, Oregon State College entomologist, point out that out of some 5,000 pests, only 46 species of insects, mites and ticks have shown resistance to insecticides.

Each of the insects that showed resistance to chemicals did not do so in all localities. Of the 46 insect species showing resistance there were ten species of scales, leaf hoppers and plant life, and ten species of flies, most of which were mosquitoes, Mr. Ritcher said.

Most cases of resistance involve chlorinated hydrocarbons and 25 of the 46 insects showed resistance to DDT.

Mr. Ritcher also explained that most of the pests that have developed resistance have numerous generations each year and a large number of resistant forms affect men and animals rather than plants.

It was pointed out that the use of insecticides eliminates weak ones of the species and that biochemical changes within the insect are mainly responsible for the resistance.

It was explained further that the insect's body is able to break down the chemical material and is often-times able to exercise enough control that the chemical is stored where it will have the least effect upon insect. Here are some of the things Mr. Ritcher said that pest fighters can do to keep up with resistance:

1. Switch from DDT to organic phosphate.
2. Rotate material before resistance develops.
3. Use other things besides insecticides, such as sanitation. Don't kill parasites and predators.

C. O. Barnard, executive secretary of the Western Chemical Association, enumerated the aims of the agricultural chemicals industry as:

1. To find the greatest usefulness of chemical compounds which, when safe handling practices are followed and there is strict adherence to proved dosage and timing schedules, and the use of suitable application equipment, will result in maximum protection against specific pests with minimum probabilities of injury to operating personnel and the public, as well as to the land, plants, crops, livestock and equipment of the user and his neighbors.
2. "The chemical compounds should be offered at cost, permitting profits to producers of agricultural crops and food and fibers at prices in line with current economic levels."

"The production of pesticidal compounds today, like some pharmaceuticals and the antibiotics, has reached the category of big-time capital investment. No longer can it be done with a few old barrels, some bottles of 'dope' and a paddle operated by poor white help," Mr. Barnard said. "The costs of discovery, synthesizing, pilot-plant production, exploratory testing, compilation of toxicological and pharmacological data, registration and commercial production plant facilities totaled close to \$2,500,000 before the compound was even offered for sale," he said.

The onion maggot is being controlled in some areas of Oregon by repeated applications of DDT dust at 10 day intervals, H. H. Crowell, Oregon State College entomologist, told the 15th annual Northwest Vegetable Insect Control Conference.

He said that experiments in an isolated area of Lake Labish, Oregon last year indicated that isodrin and

possibly malathion show promise in the control of the maggot.

Mr. Crowell explained that dry furrow treatments with dusts or wettable powders or seed treatments look better than furrow drenches with emulsions. Use of formaldehyde solution (recommended for onion smut control) with the insecticidal treatments at seeding time reduces the effectiveness of the insecticides in the peat soil, it was reported.

Seed and furrow treatments in trials on green bunching onions in the Portland area gave promising results for isodrin, malathion and Diazinon.

A. J. Walz and H. C. Manis, University of Idaho researchers, also reported that applying a suitable insecticide in the seed furrow at time of seeding onions proved an effective method of onion maggot control.

William I. Zelgler, West Coast sales manager for American Cyanamid Company, was elected chairman for next year's Pacific Northwest Agricultural Chemical Industry conference, scheduled at Portland.

L. C. Terriere, representative of the Oregon State College agricultural chemical department, was named chairman of the Western Cooperative Spray Project conference, also scheduled at Portland next year. Other conference officers are George F. Knowlton, Utah State Agricultural College, Logan, co-chairman, and Anthony S. Horn, University of Idaho extension service, Boise, secretary.

The Pacific Northwest Vegetable Insect Control conference elected William C. Cook, USDA agricultural research service, Walla Walla, Wash., as chairman. Co-chairman is Harry Adison, Dominion entomological laboratory, Victoria, B.C., while Howard E. Dorst, USDA agricultural research service entomologist, Logan, Utah, is secretary.

## Farm Chemical Company Incorporates in Kentucky

CYNTHIANA, KY. — Cardinal Chemical Co. has been incorporated here for \$50,000 to manufacture and deal in fertilizer and pesticides. Principals are Lorena J. Deming and Gene Van-Deren.



WEED CONFERENCE OFFICERS—Shown above are officers of the Southern Weed Conference, named at the ninth annual meeting of the group in New Orleans. From left to right are Dr. G. C. Klingman, professor of agronomy, North Carolina State College, Raleigh, 1955 president; Dr. W. B. Albert, plant physiologist, South Carolina Agricultural Experiment Station, Clemson, newly elected president for 1956; Dr. E. G. Rodgers, agronomist, University of Florida, Gainesville, vice president; and Dr. W. K. Porter, plant physiologist, Louisiana Agricultural Experiment Station, Baton Rouge, secretary-treasurer. A story of the conference appears on page 1 of this issue.

## Administration Soil Bank Plan Runs Into Financing Troubles in Senate

By JOHN CIPPERLY  
Croplife Washington Correspondent

WASHINGTON — Last week the administration's soil bank plan ran into the problem of cash on the barrel head when the Senate Agriculture Committee knocked down the provision of the Senate Bill S.2949 which would have paid off the cost of the acreage reserve phase of the plan through the sale of U.S. Department of Agriculture agricultural surpluses at the market price.

The soil bank will be something less than a bank until Congress or the USDA comes up with some method of financing the payment of the credit certificates issued to compensate farmers for taking field crops out of production.

This problem, not unforeseen at USDA before the legislation went to Congress, means that some new gimmick must be devised within the Senate Agriculture Committee or USDA to keep the whole administration plan alive.

The significance is this: Ezra Taft Benson, secretary of agriculture, has lost his hold on policy at the top level of the government. This was noticeable when he replaced James F. McConnell as assistant secretary of agriculture with Marvin McLain, who was director of the Commodity Stabilization Grain branch.

The appointment indicates a shift away from the firm free trade attitude of Mr. McConnell to a political "buy-the-farmer" approach. Incidentally, the new nominee came under immediate critical attention of the House Subcommittee on Appropriations for his handling of the Uniform Grain Storage Agreements, the shipment of corn to the west coast from corn states and several other items.

It is seen here that the McLain appointment means that the Republican politicians are in the saddle and that emphasis will be given to farm belt politics in the Great Plains states and the Corn Belt.

How this will work out for the plant food and pesticide industries remains to be resolved.

Both parties are driving for quick legislative action. This seems possible. All action will come from the Senate and the House will go along

with some refinements. The outlook for a new farm bill with a soil bank appears certain.

The soil bank aspect is not likely to take out as many acres as USDA estimates in the first year notwithstanding the amount of the incentive in the acreage reserve certificate payments.

In corn, for example, it is unlikely that the soil bank incentive will be effective, since farmers will measure their production per acre potential then remain out of acreage allotments and produce hogs till the cow come home.

The entire situation here is up in the air. The only certainty is that there is little support for any return of high rigid price supports for the basic crops.

One certainty is that the conservation aspects of the program will slide through Congress without opposition. This means that the Agricultural Conservation Program will have an additional \$350 million to take out of production additional lands for cover crops and timber land.

## Diamond Black Leaf Appoints Two Sales, Service Representatives

CLEVELAND—Appointment of two sales and service representatives to the nationwide staff of Diamond Black Leaf Co., Cleveland, Ohio, manufacturers of pest-control products for lawn and garden care, was announced here Jan. 26 at the company's headquarters by J. M. Merritt, sales manager.

Appointees are:

James H. Hoskins, who will represent Diamond Black Leaf in the San Francisco area, working out of the company's San Jose, Cal., sales office and Oliver R. Eames, assigned to the Detroit area, which is under the jurisdiction of the company's Des Moines, Iowa, sales office.

Mr. Hoskins comes to the Diamond Black Leaf organization from Standard Brands, Inc., where he was formerly manager of its pet food department. His previous business experience includes six years (1946-1952) with Germain's, Inc., San Jose, first as retail store manager and later as a representative of its wholesale division. From 1952 to 1954, he was associated with Lockhart Seed Co., San Jose.

Prior to taking over his new duties with Diamond Black Leaf, Mr. Eames was administrative assistant to the European comptroller of Warner Bros. Pictures at Paris, France, for 10 years. Previously, he was assistant manager of the paint department of Pittsburgh Plate Glass Co. at Detroit for three and a half years.

Both Mr. Hoskins and Mr. Eames are World War II veterans. Mr. Hoskins saw service with the Navy in the Pacific area, while Mr. Eames was in the Army in Europe for two and a half years.

## Hourly Earnings Show Gain in South Carolina

COLUMBIA, S.C. — Average hourly earnings in the fertilizer industry in South Carolina increased to \$1.21 in December, 1955, compared to \$1.13 per hour in December 1954, the South Carolina Employment Security Commission reported.

Hours per week also increased from 39.2 to 42.1. This factor in combination with the higher wage rates raised average weekly paychecks to \$50.9 in 1955, up from \$44.30 in December 1954.

However, employment declined about 100 during the year to a December level of about 1,400.





Edward B. Lukas

### Edward B. Lukas New Velsicol Technical Service Representative

CHICAGO—Promotion of Edward B. Lukas to the position of technical service representative for the Velsicol Chemical Corp. was announced recently by John F. Kirk, vice president and director of sales.

Mr. Lukas joined Velsicol in 1948, and comes to his new post from the Velsicol Resin Laboratories. He has been active in development and application research on the hydrocarbon resins and solvents that Velsicol's industrial division supplies to the paint, rubber, textile, and allied industries, and, in his new position, he will furnish special technical services to Velsicol's customers and sales representatives.

Working under the direction of industrial division sales manager, Andrew Schor, Mr. Lukas will headquarter at Velsicol's general offices and laboratories in Chicago, and maintain close liaison with Velsicol plants in Memphis, Tenn. and Marshall, Ill.

### American Agricultural Chemical Announces Personnel Changes

NEW YORK—The American Agricultural Chemical Co. has announced number of personnel changes.

R. M. Richey formerly superintendent of Baltimore Works becomes responsible for production as divisional superintendent at the following A.A.C. Co. plants: Alexandria, Va., Baltimore, Cincinnati, Henderson, N.C., Norfolk, Va., and Washington Court House, Ohio.

J. A. Layton, formerly of production department, New York office, becomes responsible for production at Baltimore Works as superintendent.

R. M. Ludwig, becomes responsible for all phases of the company's chemical control work as director, chemical control department.

B. E. Thorne, formerly assistant manager, Buffalo sales office, becomes assistant manager, New England sales office at North Weymouth, Mass.

J. J. Graham, formerly manager of Houston sales, becomes manager of New England sales office at North Weymouth, Mass.

R. R. Johnson, formerly sales supervisor of Humboldt sales office, becomes assistant manager, Humboldt branch at Humboldt, Iowa.

E. B. Stalnaker, Jr., formerly assistant manager, Alexandria, Va., sales office, becomes assistant manager, Buffalo sales office.

**CONSERVATIONIST NAMED**  
WILLWATER, OKLA.—Dr. Billy Tucker has been named assistant professor soil conservation by the Oklahoma Agricultural Experiment

## ATOMIC ENERGY

(Continued from page 1)

gists can hope to find ways to develop poisons that the insects cannot resist, Dr. Haller said.

Such radioactive markers are playing a large part in the war against insects in other ways, too. For example, Dr. Haller described how "tagged" systemic insecticides are used to learn how some plants absorb and distribute the poisons which are transmitted to insects later when they try to eat the plant. Such tests tell scientists how to distribute insecticides most efficiently, he said.

"Tagging" insects themselves with radioactive materials has helped to reveal many secrets of the pests. Even when buried beneath the soil or hidden under bark, a "tagged" insect's movements are readily given away by the clicking of a Geiger counter.

Michigan State University soil scientists told the conference that experimentation with radioactive fertilizers showed that for best results soluble phosphate should be mixed well with the soil.

Kirk Lawton, M.S.U. soil scientist, said this is important since phosphate fertilizers vary widely in their solubility. He and his associates, C. G. Apostolakis, R. L. Cook and W. L. Hill, concluded that granulated fertilizers can do their job when applied either in bands or broadcast and mixed with soil—providing the material is largely soluble in water. Thus, only fertilizers having large amounts of soluble phosphorus should be banded near the seed for best results.

The size of the particles of fertilizer also has much to do with how quickly the phosphorus can be taken up by the plant, it was pointed out.

A hope was held out by Dr. Lawrence P. Miller, plant research specialist from Yonkers, N.Y., for reducing the three billion dollar annual loss caused by plant disease.

"The entire problem of protecting plants from disease depends upon an understanding of the role of the protective chemicals after application to agricultural crops," Dr. Miller said.

Information is needed, he said, on the effectiveness of fungicides on a spore weight basis, ability of different species of lethal dose required and how firmly bound the fungitoxics are, after being taken in the fungus tissue.

"With the availability of radioisotopes, studies which previously were extremely difficult to carry out by regular chemical methods are now possible," Dr. Miller said.

"Progress is now being made which should lead to a better use of fungicides."

### Donald L. Fuller Named to Research Position with Grace

NEW YORK—Donald L. Fuller has been appointed director of research for Grace Chemical Research and Development Co. Division of W. R. Grace & Co. This division was formed last May to spearhead Grace's future expansion into new areas of the chemical industry.

Dr. Fuller, who has 20 years experience in chemical research and development, particularly in petrochemistry and related fields, came to Grace from American Cyanamid Co., where since 1952 he had been technical director for the company's petrochemical plant in New Orleans. Previously, he had served for ten years as associate director, Central Research Laboratory, General Aniline and Film Corp. at Easton, Penn. He was also earlier a research chemist for both American Cyanamid and Shell Development Co.

## Oil Officials Told of Mid-South Chemical's Expansion Program Plans

MEMPHIS, TENN. — Mid-South Chemical Corp., in a meeting Jan. 25 with officials of Continental Oil Co. and Cities Service Co., reported that it expects to distribute enough agricultural nitrogen this year to treat ten million acres. The two oil companies have an interest in Mid-South.

Ellis T. Woolfolk and J. D. Wooten, president and vice president of Mid-South, respectively, presented progress reports on the company's expansion program began last July.

They reported that a 550,000 gallon anhydrous ammonia terminal has been built and placed in operation at Harlingen, Texas, and a network of distributing stations established in Texas, Louisiana, Illinois and Iowa. These distribution points are in addition to more than 60 stations already in operation in Tennessee, Kentucky, Missouri, Arkansas, Mississippi and Alabama. Mr. Woolfolk predicted that the company will distribute 50,000 tons of nitrogen fertilizer this year.

Current expansion plans include increasing the capacity of the Memphis river-rail-highway terminal and the building of additional terminals at other strategic points along the Mississippi River.

Those present for the first directors meeting of Mid-South to be held in Memphis included: B. M. Watson of New York, president of Cities Service Co.; H. G. Osborn of Ponca City, Okla., vice president of Continental Oil Co., in charge of manufacturing; Harry Kennedy of Hous-

ton, Texas, vice president of Continental, in charge of marketing; Charles Perlitz of Houston, senior vice president of Continental; A. P. Frame of New York, vice president and a director of Cities Service, and F. M. Simpson of New York, president of Petroleum Chemicals, Inc.

## Systemic Discussed At Texas Meeting

CORPUS CHRISTI, TEXAS — At the recent producer-specialist meetings in the Coastal Bend area, a new systemic compound was discussed by specialists from Texas A&M College. The new compound, called 3911, has met with considerable success in limited trials as a systemic poison for early season cotton insects.

Several farmers indicated they would participate in the tests by having small quantities of seed treated with the new compound. B. W. Beckham, manager of the South Texas Cotton Oil Mill at Robstown, said his firm would haul the seed to the treating plant at College Station free of charge.

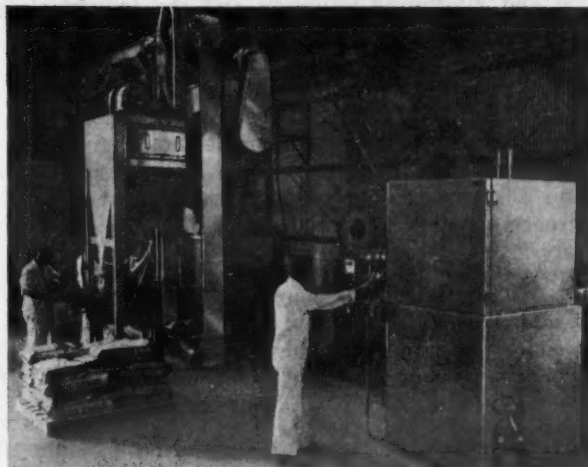
## BERRY GROWERS TO MEET

NEW BRUNSWICK, N.J. — More and better strawberries is the aim of a New Jersey meeting of growers set for Feb. 14 in the Midway Diner, Hammonton. Ernest G. Christ, extension fruits specialist at the College of Agriculture, Rutgers University, is making arrangements. He announces as the principal speaker Dr. Robert Hill, Ohio Agricultural Experiment Station scientist, who will discuss fertilizers, weed control, virus diseases and other aspects of berry culture.

## Poulsen Insecticide Plants Increase Production for Oasis Chemical Co., Inc.

A recently installed Poulsen R.T.R.\* Uni-Blender insecticide compounding plant, at left, is producing Oasis Brand insecticides in Imperial, California. It is a dual unit with 40 cubic feet capacity; three to four batches per hour. At right is a Poulsen R.T.R. Uni-Blender liquid formulating system.

\*R. T. R. Ready-to-Run U.S. Pat. No. 2,591,721



Poulsen R.T.R.\* Uni-Blender plants, like the ones above, can increase per-hour production and greatly reduce hand operations and maintenance costs. Poulsen Uni-Blenders are ready to produce in these fields: compounding and liquid formulating for insecticides, chemicals, etc.; feed milling for poultry and hogs; commercial fertilizer, and compounding for soaps and detergents. Other complete plants for sulphur and inert materials, dehydration, and feed mills for cattle, are also made by Poulsen Company.

A Poulsen Company representative will be glad to discuss your production and processing problems with you. We'll be glad to send you technical bulletins on any of the above ready-to-run plants.

Write for technical bulletins



**Poulsen Company**

2341 E. Eighth Street  
Los Angeles 21, California

Please send information on these ready-to-run plants:

- ☐ Insecticides ☐ Fertilizer  
☐ Feed Milling ☐ Soaps

Name .....

Address .....

City..... State.....



# Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

## Farm Transition Holds Promise for Industry

Millions of words have been written and spoken regarding the present farm "situation" which finds agriculture coming under varying degrees of economic pressure. The severity of the current condition, it seems, is largely to be judged by which side of the political fence the speaker stands to view the scene, but all seem to agree that fundamental transition is under way. Just where this will lead us and how much uprooting it may do in the process, remain the unanswered questions.

Sherman E. Johnson, director of farm and land management research of the U.S. Department of Agriculture, in a recent talk in Washington, pointed out that farmers are being helped to develop systems of farming that will be most profitable to them over a period of years. He suggests that looking ahead for 4-5 years in a "middle term outlook" is presently more important than the long-term plan. Farmers must start with their present farming systems and their current financial and family situations.

"Because changes are likely to require extra time, money, and management, the roughest part of the road will be the period of transition from the present farming system to the potentially more profitable one," he said. "Frequently," he added, "net income actually declines while the change-over is in process."

Mr. Johnson pointed out five principal factors to consider in the outlook approach to farm development. They are: market prospects, the supply prospects in relation to prospective markets, the farm programs in prospect, the local production and marketing situation and the individual farm and family situation.

An increase of from 9 to 10% in demand for farm products during the next five years is seen by Mr. Johnson. "This is likely to have the greatest impact on the market for meat and other livestock products," he said. "If we look ahead for some 20 years, the market for farm products may increase about 40% from the level of the past two years."

In the long pull, therefore, Mr. Johnson said, market expansion should provide an opportunity for achieving a better balance between production and markets than we now enjoy.

Sometimes it is suggested that farmers should gear their production more closely to prospective markets. But it is difficult for the individual grower to consider the effect of his output on the price of the product.

Another significant reason pointed out by Mr. Johnson, is the fact that technical change is not reversible.

"Once investments have been made in improvements to increase output, they become imbedded in the cost structure as fixed costs. Unless prices drop precipitously, individual farmers cannot cut down on even the variable expenses for hybrid seed, pesticides and fertilizer, without reducing gross income more than expenses. Moreover, nearly four-fifths of the farm work is done by the operator and members of his family. On most farms, therefore, a reduction in output will not reduce labor costs.

"Once farmers have committed themselves and their investments to farming, their alternatives are limited. They can shift to other enterprises if other products have more favorable income prospects, and if their farms are located in areas where other crops or livestock can be produced. In some areas, the younger members of the family, and even the younger farm operators, can turn to nonfarm employment. If many operators give up farming, their land becomes available for purchase

or lease by other farmers. This may provide an opportunity for farm consolidation with resulting lower unit costs and higher farm incomes for those who remain.

"But giving up farming, or buying additional land, are major decisions. Most farmers require some time to work them out. Perhaps the first inclination when income drops is to weather the storm by maintaining total output, or even increasing it in an attempt to hold income at former levels. Consequently, much of the job of balancing production with peacetime markets is still ahead of us."

Summarizing, Mr. Johnson indicated that in the future, there is perhaps more hope for the market to grow up to our productive capacity, than for any shrinkage of farm production to fit the size of the market. "It should be emphasized, however," he said, "that market prospects call for shifting of production rather than for much of any increase in output during the next few years. The shifts that seem to be called for—away from surplus cash crops and into hay, pasture, and eventually roughage livestock—are of truly heroic proportions. The longer term market outlook points in the same direction.

"In many areas of the Great Plains, the cotton South, and elsewhere, these shifts also may mean larger family farms and fewer workers in agriculture, but improved incomes to those who remain in full-time farming. How the needed shifts can be made profitable to all farm people is a challenge to researchers, to extension workers, and to farm program agencies."

It is also an interesting and rather profound development to be watched by the entire industry that supplies chemical products to agriculture. Over the long pull, or the "middle term outlook" described by Mr. Johnson, the picture for the trade looks promising despite presently-cloudy days.

## Educating Aerial Applicators

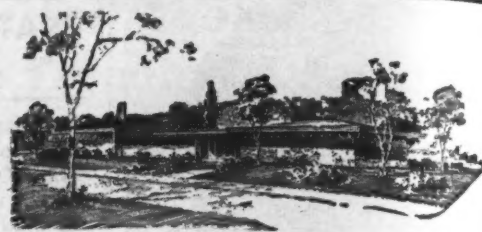
We note in the news that many states are currently holding short courses for airplane and ground sprayers and dusters, which calls attention to the great strides that have been made in agricultural aviation in late years.

Figures for 1955 say that one acre out of every six is now treated by aircraft with dust, spray, fertilizer or other chemicals. Some 644 million pounds of dust-type chemicals are flown on by private companies who operate more than 7,000 planes. Spraying by air amounts to 80,000,000 gallons a year. It is encouraging to see widespread programs for the education of this group.

## Quote

Farmers' total expenditures are expected to remain near present levels in 1956. With farmers' income positions somewhat less favorable than in recent years, they can be expected to be cautious in purchases.

On the other side, the requirements of commercial agriculture are now high and price relations remain favorable for some continued substitution of such things as fertilizer for land and machinery for labor. The big change among cost rates occurred during and immediately following World War II. Relative to the composite index of all cost rates, prices of many important industrially produced items have declined significantly during the war and postwar periods. Fertilizer and gasoline, for example, are only about three fourths as expensive relative to all cost rates as they were in the 1935-39 period.—Kenneth L. Bachman, Head, Production, Income and Costs Section, Agricultural Research Service, Production Economics Research Branch, USDA, in recent address before the 33rd annual Agricultural Outlook Conference, Washington, D.C.



## Croplife



Member of Business Publications Audit

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

Managing Editor

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# MEETING MEMOS

Jan. 30—Wisconsin Fertilizer and Lime Dealers Conference, Memorial Union, University of Wisconsin, Madison, Wis.

Jan. 30-31—National Cotton Council of America, Annual Meeting, Buena Vista Hotel, Biloxi, Miss.

Jan. 30-Feb. 3—Purdue Pest Control Operators School, Purdue University, Lafayette, Ind.

Feb. 6-8—Agronomy Section, Association of Southern Agricultural Workers, Atlanta (Ga.), Biltmore Hotel; W. E. Colwell, North Carolina State College, Secretary.

Feb. 6-8—Cotton State Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga.; W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-8—Central Plant Protection Board, Allerton Hotel, Chicago, Ill.

Feb. 7-9—National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 13—Arkansas Anhydrous Ammonia Dealers Assn., Lafayette Hotel, Little Rock; G. E. Davis, Lepanto, Ark., secretary-treasurer.

Feb. 14-16—Agricultural Chemicals Conference, Lubbock, Texas.

Feb. 15-16—Oklahoma Plant Food

Educational Society, Oklahoma A&M College, Stillwater, Okla.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., secretary-treasurer.

Feb. 16-17—Middle West Soil Improvement Committee's annual joint meeting of the fertilizer industry and Universities; Edgewater Beach Hotel, Chicago.

Feb. 18-20—Third Annual Pacific Northwest Agricultural Chemical Industry Conference, Imperial and Benson Hotels, Portland, Ore.

Feb. 20-21—Southwestern Branch, Entomological Society of America, Hotel Texas, Fort Worth, Texas.

Feb. 22-24—Fifth Annual Ohio-Indiana Agricultural Aviation Conference, Ohio Union, Ohio State University, Columbus.

Feb. 22-24—Alabama Pest Control Conference; Alabama Polytechnic Institute, Auburn, Ala.

Feb. 22-24—Midwestern Chapter,

National Shade Tree Conference; LaSalle Hotel, Chicago; Noel B. Wysong, Cook County Forest Preserve, River Forest, Ill., secretary.

Feb. 28-29—Fifth Annual Pesticide Chemicals School, Clemson House, Clemson, S.C., Dr. J. H. Cochran, Dept. of Entomology and Zoology, Clemson College, Clemson, S.C.

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18—National Agricultural Chemicals Assn., Spring Meeting; Hollywood Beach Hotel, Hollywood, Fla.; Lea S. Hitchner, NAO executive secretary, 1145 19th St. N.W., Washington 6, D.C.

March 28-30—North Central States Branch, Entomological Society of America, Purdue University Memorial Union, Lafayette, Ind.

April 10-12—Council for Agricultural and Chemurgic Research, 21st Annual Conference; Congress Hotel, Chicago; Sec., John W. Ticknor, Council for Agricultural and Chemurgic Research, 350 Fifth Ave., New York 1, N.Y.

May 16-18—Synthetic Organic Chemical Manufacturers Assn., Annual Outing, Skytop, Pa.

May 20-22—42nd Mid-year Meeting, Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago; H. W. Hamilton, secretary, 50 E. 41st St., New York 17.

June 10-13—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

July 12—South Carolina Fertilizer Meeting, Tour of Edisto Experiment Station, Blackville, S.C.

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

Aug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., Secretary.

## Mosquito Control Bills Introduced in New Jersey

TRENTON—Sen. Frank S. Farley has sponsored a series of bills in the New Jersey Senate aimed at mosquito control. One bill would set up a seven-member state mosquito control commission.

Another calls for the appropriation of \$600,000 for a mosquito control campaign. Of this, \$100,000 would go to the state Agricultural Experiment Station at Rutgers for research and the remainder would be for county control activities.

## STAUFFER DIVIDEND

NEW YORK—The board of directors of Stauffer Chemical Co. has declared a quarterly dividend of 40c per share payable March 1, 1956, to the common stockholders of record at the close of business Feb. 15, 1956. An extra dividend, previously declared and announced, of 50c per share was paid on Jan. 16 to stockholders of record Jan. 3, 1956.

## Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch.

All Want Ads cash with order.

## HELP WANTED

WANTED—ALERT YOUNG MAN, SINGLE preferred, to manage grain elevator or would consider taking in as a partner. No investment needed. Send snapshot along with past experience in written letter. A real opportunity for the right man. Sharrock Elevator, Box 32, Mt. Gilead, Ohio.

EXCELLENT OPPORTUNITY FOR EXPERIENCED fertilizer salesman to represent an established company in North Dakota, South Dakota and Minnesota. State age, education, qualifications, experience and salary requirements. Ad No. 1395, Crop-life, 141 W. Jackson, Chicago 4, Ill.

## MACHINERY FOR SALE

## FOR SALE

Used Fertilizer Machinery  
Shreveport Fertilizer Works  
P. O. Box 1, Shreveport, La.  
Detailed List Furnished on Request. Delivery Immediately.

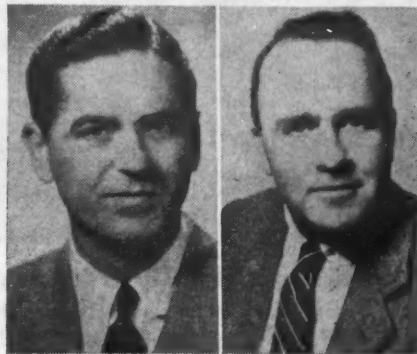
Shreveport Fertilizer Works  
P. O. Box 1  
Shreveport, Louisiana

## Dannen Mills Forms Fumigation Section

ST. JOSEPH, MO.—The formation of a fumigation department in the warehousing division of Dannen Mills was announced recently by Dwight L. Dannen, company president. Harold Denney will head the department which will have headquarters in Yale, Okla.

## JOINS CSMA

NEW YORK—Alfred A. Mulliken, 45-year-old native of Newton, Mass., has joined the staff of the Chemical Specialties Manufacturers' Assn. as assistant secretary. He will directly assist H. W. Hamilton, who served for the last 15 years as secretary and managing director.



J. T. Cleland Tom A. Eadon, Jr.

APPOINTED — The appointments of J. T. Cleland as sales manager of the Dallas branch, and of Tom A. Eadon, Jr., as sales manager of the Philadelphia branch have been announced by W. N. Brock, vice president and general manager of the Chase Bag Co. Mr. Cleland joined Chase in 1937 as a salesman in the west Texas area. He later served as sales representative in the Dallas branch. Mr. Eadon has been a sales representative with the Philadelphia branch since 1948, covering territories in New Jersey, Pennsylvania, Delaware, Maryland, Virginia and Washington, D.C. He is a graduate of the University of Pennsylvania.

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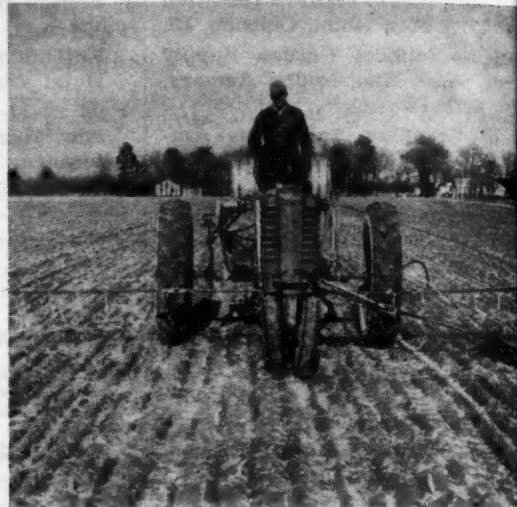
## Makes Every Farmer a Prospect!



**The farmer with fat, flat, fertile acres** removes hundreds of pounds of nitrogen and other plant foods from every acre with every harvest. Nitrogen-rich ARCADIAN Fertilizers enable these heavy users of plant food to provide nitrogen growing power in the soil quickly, easily and at low cost. High volume builds extra profit for you.



**Farmers with hilly or small fields** usually need plenty of nitrogen-rich fertilizers to improve the soil and to boost yields to a profitable level. You can build a consistent, regular market for economical ARCADIAN Fertilizer products that produce erosion-controlling, soil-building plant cover and profitable yields of forage or other crops.



**Big farmers and small operators alike** get special advantages with speedy new ways of applying ARCADIAN high-nitrogen fertilizers. You can sell big farmers URAN Nitrogen Fertilizer Solution and a spray rig to feed 100 or 200 acres per day for top yields. Small farmers make a good market for custom application of ARCADIAN Fertilizers.



**Growers of specialty crops** like fruit need nitrogen above all other plant foods. ARCADIAN high-nitrogen products make quick, easy work of feeding nitrogen to large or small plantings, by a variety of methods of application. You can sell ARCADIAN Nitrogen for spray, ground, airplane or hand applications, as well as for use in irrigation water.



**Vegetable growers** are heavy users of nitrogen-rich fertilizers since most of their crops are heavy nitrogen feeders. Concentrated ARCADIAN products feed these crops well with far less lugging, lifting and hauling. They provide higher value per pound as fertilizer and higher cash income for you per bag or per tank.



**Farmers who plan their operations** carefully for crop profits and soil conservation are good users of fertilizer. They know the high income-producing value and low cost of concentrated, nitrogen-rich fertilizers in the ARCADIAN line. This year, sell ARCADIAN to make more money for yourself and for your customers.

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— bigger than ever in 1956 — gives you strong backing for extra sales of high-nitrogen ARCADIAN products that provide profits for every season and every system of application. Every acre is a market for low-cost, fast-spreading, labor-saving ARCADIAN Fertilizers. Write for details on the complete ARCADIAN line.

## Arcadian

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Allied Chemical & Dye Corporation

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